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NEW COLUMNS ON THE FALL REQUEST FORM . . .

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I - Intermediate elementary
A - Advanced elementary (in terms of grade 6)
P-I - A combination of primary and intermediate
I-A - A combination of intermediate and advanced

"Phase" (a term used in the Gaver reference) is indicated by the numbers 1, 2 or 3. Books designated (1) represent titles which, according to the Gaver reference, should be included in every school library, even in the smallest school, and should be considered first priority items for selection. Titles designated (2) or (3) represent the second and third "Phase" (or priority) in developing an elementary school library collection.

Titles which are not identified by a grade level letter and a "Phase" number are those which are suitable for grades 7-12, or those which pertain to Montana and are not classified by grade level. (The Gaver reference is available only for grades K-6.) The green pages of the fall order form list Montana books and books pertaining to the west.

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DEADLINE FOR FALL REQUEST . . .

October 9 is the deadline for fall requests. Your request forms must arrive in Helena no later than October 9 by first class mail.

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Physician Manpower Needs Assessment in Montana

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Physician Manpower Needs Assessment In Montana

by Marcia Liberatore
January, 1978

Sponsor:

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PHYSICIAN MANPOWER NEEDS ASSESSMENT IN MONTANA

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The support and cooperation of all those I encountered and contacted during the three-month period of this study are deeply appreciated. The efforts of my advisory committee to assist and advise me and conscientiously edit this report are especially appreciated. I am indebted to WICHE and my sponsoring agency for the opportunity to learn so much in such a short period of time.

FORWARD

The impetus for this study is provided by the National Health Planning and Resource Development Act of 1974 (PL 93-641) which requires that data concerning the location, type and number of the state's health manpower be compiled and analyzed in each state, in this case by the Montana Department of Health and Environmental Sciences and the Montana Health Systems Agency.

Since the law stresses the provision of primary health care services in rural and economically depressed areas, the physician manpower data analyzed in this study emphasizes the supply of primary care physician specialties (general/family practice, internal medicine, pediatrics, and obstetrics/gynecology).

The Montana State Department of Health and Environmental Sciences, Health Planning and Resource Development Bureau has sponsored this physician study through the Western Interstate Commission for Higher Education's (WICHE) Resource Development Internship Programs. WICHE is a public agency which increases the educational opportunities and supply of specialized manpower in 13 western states.* The Resource Development Internship Program places students from these states in positions recruited from public and private organizations in the 13-state region.

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*Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming

PREFACE

The major data source for this study is the Montana State Department of Health and Environmental Sciences, Bureau of Records and Statistics' newly created file on non-federal physicians licensed to practice medicine and/or surgery in Montana. Data on the doctors of medicine (M.D.) and osteopathy (D.O.) has been obtained from the Department of Professional and Occupational Licensing, the American Medical Association Directory, the Montana Medical Association (MMA), and the Montana Osteopathic Association (MOA). (See Appendix A for the information on file at the Bureau of Records and Statistics).

Data on federal physicians has been provided by directors of the two Veterans Administration hospitals in Miles City and Fort Harrison, Indian Health Service in Billings, Malmstrom Air Force Base Hospital in Great Falls, and the Region VIII Public Health Service in Denver, Colorado.

Background information on the physician manpower situation has been provided by personal communications with physicians in the state, directors of the MMA and MOA, and a survey of medical and osteopathic physicians in Montana.

A glossary of terms used in this study is provided at the end of the report.

Background Information

Physicians have a central role in today's health care delivery system. They are the health care experts and our primary source of health care. Without these highly skilled professionals and their support staff, the hospitals, nursing homes and clinics would be little more than buildings, because health care is provided by people, not facilities.

Because of the physician's role in the health care system, it is important that patients have access to them. To ensure this accessibility, there must be an adequate number of properly trained physicians, with a proper distribution of specialists.

Like the rest of the nation, Montana experiences two major problems in regard to physician manpower: geographical maldistribution and specialty maldistribution. Therefore, it is the maldistribution characteristics rather than the overall supply of physicians which must be addressed in attempting to remedy inequitable access to medical care.

Recent federal health legislation attempts to equalize access to medical care. The Health Planning and Resource Development Act of 1974 (PL 93-641) was written expressly for this purpose, and requires the state to assess its health manpower resources. The Health Professions Education Assistance Act of 1976 (PL 94-484) places regulations on medical training to encourage more medical students to specialize in primary care rather than in non-primary care fields. However, increasing the number of primary care specialists is no guarantee that these specialists will locate in the shortage areas. It appears that incentives for rural practice must be provided if any federal or state legislation wishes to effectively address the maldistribution of physicians. For this reason, the recommendations made in this report focus on incentives rather than on regulations.

This study is designed to assess physician accessibility in Montana. It will cover the following items:

1. Inventory of physicians - non-federal and federal - showing their distribution and characterizing the services they provide;

2. Identification of counties with physician shortages and surplus;

3. Projection of physician supply and need in 1985;

4. Supply and training of primary care physicians;

5. Inventory of physicians' recruitment programs for servicing Montana's needs;

6. Incentives for physicians to establish their practice in shortage areas;

7. Goals and recommended solutions to physician accessibility problems.

PHYSICIAN INVENTORY

General Statistics on Montana and U.S. Physicians

With 926 active non-federal physicians* providing direct patient care in Montana, there are 124 physicians per 100,000 people. In 1973 the ratio for the state was 100 physicians/100,000, while the national ratio was 137 physicians per 100,000.[1]

Nationwide, counties with less than 10,000 people have only 48 physicians per 100,000.[2] Out of 56 counties in Montana, 36 have a population of less than 10,000, but they have a slightly higher ratio of 54 physicians/100,000. U.S. counties with 5,000,000 or more people have 233 physicians/100,000.[3] Missoula county, with only 64,600 people, comes closest to matching this high national ratio with 224 physicians/100,000. Although Montana does not have the lowest or highest ratios in the nation, its physician maldistribution problems still warrant the attention of Montana citizens and health planners.

Type of Practice

The total number of physicians in Montana, 984, includes both active and inactive non-federal and National Health Service Corps physicians. Ninety-six percent (949) of this total supply maintain an active license and have full practice rights.** Of the 949 physicians, 946 are Doctors of Medicine (M.D.'s) and 3 are Doctors of Osteopathy (D.O.'s). Four percent (35) of the total physician population are inactive - no longer practicing medicine or surgery.

Only 23 (2%) of the 949 active physicians in Montana are engaged in administration, medical research, other patient care, other non-patient care, or have no classification for their type of practice. Most Montana physicians (926 or 94%) are engaged in direct patient care*** Table A illustrates these statistics.

---

*This includes 9 National Health Service physicians who technically are federal physicians, but who provide services to the general public.

**Prescribe drugs, perform surgery, have hospital referral privileges.

***Direct patient care physicians refers to those physicians who are engaged in seeing patients and/or providing patient services as pathologists and radiologists.

TABLE A: MONTANA PHYSICIANS BY TYPE OF PRACTICE - 1977

	Training (Interns and Residents)	Direct Patient Care	Adminis- tration	Medical Teaching	Medical Research	Other Patient Care	Other Non- Patient Care	In- active	No Classifi- cation
Montana (Total)	0	926	6	0	2	2	6	35	7
I Eastern	0	67	0	0	0	0	1	3	0
II N. Central	0	163	0	0	0	1	3	4	1
III S. Central	0	208	1	0	1	0	0	10	3
IV Southwestern	0	236	2	0	1	1	1	5	1
V Northwestern	0	252	3	0	0	0	1	13	2

Total physicians (all types of practice): 984 (includes inactives)

Total active physicians = 949

Complete definitions of the type of practice categories are included in Appendix B. Montana has no interns, residents, or physicians in medical teaching (on a full-time basis) since the state does not have a medical school.

Age Distribution

The age distribution of active non-federal Montana physicians (Appendix C) shows that 3.1% are under 30, and 7.4% are 65 and older. The median age for Montana physicians is 45.9 years.

In 1973, the AMA reported that 11.8% of the 366,379 physician population (inactive and active) in the U.S.A. were under 30 years old, 12.8% were 65 years and older, and the median age was 45 years.[4] Montana compares favorably, but concern is generated by considering the geographical distribution of the young and old physicians.*

Foreign Medical Graduates

Foreign medical graduates (including those from Canada) comprise 3% of the active non-federal physician population. This figure could be as high as 6%, since data on the medical schools from which the physicians received their degrees was not available for 3% of the active physicians in Montana. In 1973, the AMA reported that 20% of the active physicians in the U.S.A. were foreign medical graduates, and this excluded the Canadian medical graduates.[5]

---

*Data not accurate enough for such an analysis at the time of this study.

GEOGRAPHIC DISTRIBUTION OF MONTANA PHYSICIANS

Distribution Among Specialty Groupings

The direct patient care physicians (DPC) can be subdivided into specialty groupings: primary care (PC) and non-primary care (NPC) physicians. The patient's initial contact with the health care delivery system is generally with a primary care physician. These physicians assume a long-term responsibility for the physical, psychological, and social aspects of the patients' care. General/family practice completely satisfy this definition of primary medicine, while pediatrics and internal medicine do so in general. Obstetricians and gynecologists are becoming more involved in primary care since about 80% of their patients are being treated for the same types of problems other primary care physicians treat.[6] Therefore, the primary care specialty grouping includes general/family practioners*, internists, pediatricians and obstetricians/gynecologists. This classification scheme is also used by the federal government in designating primary health care shortage areas. A breakdown by regional location of primary care specialists is given in Table B. Map B-1 shows the regional and county breakdowns of Montana.

TABLE B

BREAKDOWN OF MONTANA PHYSICIANS
IN PRIMARY CARE SPECIALTIES BY REGION - 1977

		GP/FP	Internal	Pediatrics	OB/GYN	Total Primary Care Physicians
I	Eastern	38	5	3	3	49
II	North Central	39	11	18	10	78
III	South Central	46	35	9	14	104
IV	Southwestern	82	19	13	11	125
V	Northwestern	66	37	14	15	132
TOTAL MONTANA		271	107	57	53	488

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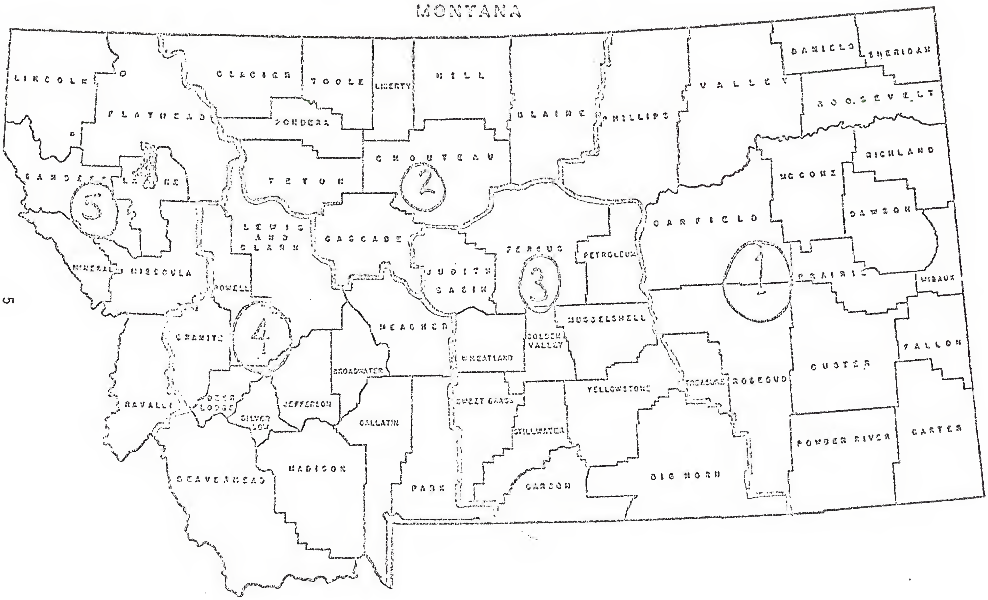
*Family practice is actually a specialty whereas general practice is not; however, they address similar needs.

MAP B-1: REGIONS AND COUNTIES IN MONTANA



MONTANA SUBAREA BREAKDOWN BY COUNTIES AND POPULATIONS

1--EASTERN	1975	1985
District 1		
Daniels	3,100	3,143
Phillips	5,400	5,757
Roosevelt	10,300	11,272
Sheridan	5,400	5,144
Valley	13,200	16,325
District 2		
Dawson	10,700	13,067
Garfield	1,700	1,784
McCone	2,700	2,613
Prairie	1,900	1,915
Richland	9,900	12,093
Wibaux	1,500	1,538
District 3		
Carter	1,900	1,882
Custer	12,000	14,642
Fallon	4,000	6,967
Powder River	2,400	2,285
Rosebud	9,700	11,230
Treasure	1,200	1,236
	97,000	102,893

2--NORTH CENTRAL

Blaine	6,800	7,191
Cascade	83,900	88,274
Chouteau	6,300	6,491
Glacier	11,100	11,961
Hill	17,900	19,641
Liberty	2,500	2,697
Pondera	6,900	7,462
Teton	6,500	7,875
Toole	5,400	5,174
	147,300	156,766

3--SOUTH CENTRAL

Big Horn	10,900	12,161
Carbon	7,800	8,889
Fergus	13,000	13,617
Golden Valley	900	917
Judith Basin	2,700	2,745
Musselshell	4,200	4,796
Petroleum	700	678
Stillwater	5,700	6,090
Sweet Grass	3,000	2,897
Wheatland	2,400	1,923
Yellowstone	97,300	126,106
	148,100	180,819

4--SOUTHWESTERN	1975 -	1985
Beaverhead	8,300	9,095
Broadwater	2,800	3,428
Deer Lodge	15,200	15,482
Gallatin	37,300	44,058
Granite	2,700	2,801
Jefferson	6,700	8,169
Lewis/Clark	36,900	46,931
Madison	6,737	8,655
Meagher	2,300	2,216
Park	12,100	14,590
Powell	7,500	9,015
Silver Bow	43,000	44,457
	181,537	208,897

5--NORTHWESTERN

Flathead	44,600	56,402
Lake	17,100	19,876
Lincoln	16,500	16,589
Mineral	3,500	4,325
Missoula	64,600	78,171
Ravalli	18,400	21,142
Sanders	8,100	9,588
	172,800	206,093

Total Population	1975	1985
	746,737	855,460

Non-primary care physicians provide highly specialized services to a more limited segment of the population through referrals from primary care physicians. Non-primary care specialties include surgery, pathology, radiology, neurology, psychiatry, and all others. Table C gives a breakdown by regional location of all the non-primary care specialists in the State.

TABLE C

BREAKDOWN OF MONTANA PHYSICIANS IN NON-PRIMARY CARE SPECIALTIES BY REGION

Region	Allergy	Anesthesiology	Cardiovascular Diseases	Dermatology	Emergency Medicine	General Preventive Medicine	Nephrology	Neurology	Occupational Medicine	Ophthalmology	Otorhinolaryngology	Pathology	Pathology, Clinical	Psychiatry	Psychiatry, Child	Public Health	Pulmonary Diseases	Radiology	Radiology, Diagnostic	Radiology, Therapeutic	Surgery, General	Surgery, Neurological	Surgery, Orthopedic	Surgery, Plastic	Surgery, Thoracic	Surgery, Urological	Other Specialty	TOTAL
EASTERN		1								1	3	2		2				2			7							18
N. CENTRAL		10		2	1			1		7	2	4	1	4				13		1	19	3	9		1	3	4	85
S. CENTRAL	1	11		3	1	1		2		10	4	8		6				10			18	4	10	2	2	3	8	104
SOUTHWEST.	1	8		2			1			9	5	6		9		3	1	14	2		29		11			5	4	110
NORTHWEST.		11	2	4	2			3	1	8	4	7		8	1			12			25	2	15	1	2	4	9	121
TOTAL MONTANA	2	41	2	11	4	1	1	6	1	35	18	27	1	29	1	3	1	51	2	1	98	9	45	3	5	15	25	438

The regional totals contrast significantly in Table B and Table C. The difference is attributable to the concentration of physicians in the most populated counties. Montana's three most populated counties - Cascade (North Central region), Yellowstone (South Central region), and Missoula (Northwestern region) - have 48.6% of the active physicians in direct patient care. Only 33.0% of the state's population are located in these counties. The skewed geographic distribution is particularly evident for non-primary care specialists, since these three counties have 58.7% of the non-primary care specialists in Montana; and 3.2% of the non-primary care specialists are located in 36 counties with less than 10,000 people, but which claim 21.4% of the state's population. (These observations are facilitated by the Table in Appendix E which groups the counties by population and indicates the number and ratios per 100,000 population for primary care physicians, GP/FP's and non-primary care physicians.)

In Montana the actual number of primary care physicians is only slightly greater than the number of non-primary care physicians as Table D summarizes. Rather than use actual numbers to compare physician supply, the physician/100,000 civilian population ratio is used since it allows a comparison between the specialty groupings and the ideal ratios suggested by a survey of specialists reported in Medical Economics.[7] (See Appendix D for a list of the suggested ratios.) Population data for this study is based on estimated figures for 1975.[8]

Table D shows that Montana approaches the ideal ratios only for non-primary care specialties. (However, Table E shows that there is an over supply of some and an undersupply of other non-primary care specialists.) The largest discrepancy from an ideal ratio is in primary care specialties. (All categories of primary care specialties indicate a state shortage as shown in Table E.)

TABLE D

DISTRIBUTION OF MONTANA PHYSICIANS[a]
IN DIRECT PATIENT CARE BY SPECIALTY GROUPING - 1977

Specialty Grouping	Number	Percent	Physicians/ 100,000 Population[b] Ratio	Ideal Ratio
All Direct Patient Care	926	100	124	148.3
Primary Care[c]	488	52.7	65	89
General/Family Practice	271	29.2	36	50
Non-primary care[c]	438	47.3	59	59.3

a. Non-federal and National Health Service Corps physicians.

b. Based on the 1975 projected population figures available from the Montana State Department of Community Affairs[8] (745,800 Montana civilians).

c. This category includes general/family practitioners, internists, pediatricians, and obstetricians/gyncologists. This category includes all other specialists. (see Table B for a breakdown)

d. See Table C for breakdown of non-primary care physicians in the State.

PRIMARY MEDICAL CARE SHORTAGES AND SURPLUS

In reviewing the data in Table E, the primary health care shortage areas can be identified according to the Federal government's standards. Counties or subdivisions with less than 28.5 primary care physicians per 100,000 population* qualify for National Health Service Corps physicians, and those with a ratio of 33.3 physicians per 100,000 population**, may qualify if other statistics indicate that the demands for health care are not being adequately met. According to this criteria, the counties experiencing primary health care shortage are as follows: (grouped according to region)

Eastern:	District 1 - Phillips, Valley District 2 - Wibaux District 3 - Fallon, Rosebud, Treasure
North Central:	Blaine, Glacier, Pondera
South Central:	Big Horn, Musselshell, Golden Valley, Judith Basin, Petroleum
Southwestern:	None
Northwestern:	None

Those counties oversupplied with primary care specialists according to the suggested ratios are the following:

Eastern:	District 2 - Garfield, Prairie District 3 - Custer
North Central:	None
South Central:	None
Southwestern:	Gallatin
Northwestern:	Missoula

---

*This corresponds to a population/physician ratio of 3,500/1.

**This corresponds to a population/physician ratio of 3,000/1.

TABLE E: NUMBER AND RATIO OF MONTANA PHYSICIANS PER 100,000 CIVILIAN POPULATION IN DIRECT PATIENT CARE BY COUNTY AND REGION* 1977

REGION COUNTY	POPULATION**	NUMBER IN DPC (ratio)	NUMBER IN GP/FP (ratio)	NUMBER IN PC (ratio)	NUMBER IN NPC (ratio)
I EASTERN					
District 1					
Daniels	3,100	2 (65)	2 (65)^{X}	2 (65)	0 (-)
Phillips	5,400	1 (19)	1 (19)$^{=}$	1 (19)$^{\oplus}$	0 (-)
Roosevelt	10,300	7 (68)	6 (58)^{X}	6 (58)	1 (10)
Sheridan	5,400	2 (37)	2 (37)	2 (37)	0 (-)
Valley	13,200	7 (53)	4 (30)$^{=}$	4 (30)$^{\oplus}$	3 (23)
Sub-total	37,400	19 (51)	15 (40)	15 (40)	4 (11)
District 2					
Dawson	10,700	10 (93)	5 (47)	8 (75)	2 (19)
Garfield	1,700	2 (118)	2 (118)^{X}	2 (118)^{X}	0 (-)
McCone	2,700	1 (37)	1 (37)	1 (37)	0 (-)
Prairie	1,900	2 (105)	2 (105)^{X}	2 (105)^{X}	0 (-)
Richland	9,900	6 (61)	4 (40)	4 (40)	2 (20)
Wibaux	1,500	0 (-)	0 (-)$^{=}$	0 (-)$^{\oplus}$	0 (-)
Sub-total	28,400	21 (74)	14 (44)	17 (60)	4 (14)
District 3					
Carter	1,900	1 (53)	1 (53)	1 (53)	0 (-)
Custer	12,000	20 (167)^{X}	3 (25)$^{=}$	11 (92)^{X}	9 (75)^{X}
Fallon	4,000	2 (50)	1 (25)$^{=}$	1 (25)$^{\oplus}$	1 (25)
Powder River	2,400	1 (42)	1 (42)	1 (42)	0 (-)
Rosebud	9,700	3 (31)	3 (31)$^{=}$	3 (31)$^{\oplus}$	0 (-)
Treasure	1,200	0 (-)	0 (-)$^{=}$	0 (-)$^{\oplus}$	0 (-)
Sub-total	31,200	27 (87)	9 (29)$^{=}$	17 (54)	10 (32)
Region Total	97,000	67 (69)	38 (39)	49 (51)	18 (19)

*These regions are the five planning regions for the state, designated by the Governor.

**Projected 1975 civilian population figures available from the Department of Community Affairs.

KEY: X
= (See Page ___)
⊕

TABLE E (continued-page 2)

	REGION COUNTY	POPULATION	NUMBER IN DPC (ratio)	NUMBER IN GP/FP (ratio)	NUMBER IN PC (ratio)	NUMBER IN NPC (ratio)
II	NORTH CENTRAL					
	Blaine	6,800	2 (29)	2 (29)$^{=}$	2 (29)$^{\oplus}$	0 (-)
	Cascade	83,900	124 (148)	17 (20)$^{=}$	49 (58)	75 (89)^{X}
	Chouteau	6,300	3 (48)	3 (48)	3 (48)	0 (-)
	Glacier	11,100	3 (27)	2 (18)$^{=}$	2 (18)$^{\oplus}$	1 (9)
	Hill	17,900	19 (106)	6 (34)	12 (67)	7 (39)
	Liberty	2,500	2 (80)	1 (40)	1 (40)	1 (40)
	Pondera	6,900	3 (43)	2 (29)$^{=}$	2 (29)$^{\oplus}$	1 (14)
	Teton	6,500	3 (46)	2 (31)$^{=}$	3 (46)	0 (-)
	Toole	5,400	4 (74)	4 (74)^{X}	4 (74)	0 (0)
	REGION TOTAL	147,300	163 (111)	39 (26)$^{=}$	78 (53)	85 (58)
III	SOUTH CENTRAL					
	Big Horn	10,900	2 (18)	2 (18)$^{=}$	2 (18)$^{\oplus}$	0 (-)
	Carbon	7,800	5 (64)	5 (64)^{X}	5 (64)	0 (-)
	Fergus	13,000	11 (85)	7 (54)^{X}	7 (54)	4 (31)
	Golden Valley	900	0 (-)	0 (-)$^{=}$	0 (-)$^{\oplus}$	0 (-)
	Judith Basin	2,700	1 (37)	0 (-)$^{=}$	0 (-)$^{\oplus}$	1 (37)
	Musselshell	4,200	1 (24)	1 (24)$^{=}$	1 (24)$^{\oplus}$	0 (-)
	Petroleum	700	0 (-)	0 (-)$^{=}$	0 (-)$^{\oplus}$	0 (-)
	Stillwater	5,200	3 (58)	3 (58)^{X}	3 (58)	0 (-)^{X}
	Sweet Grass	3,000	2 (67)	2 (67)^{X}	2 (67)	0 (-)
	Wheatland	2,400	2 (83)	2 (83)^{X}	2 (83)	0 (-)
	Yellowstone	97,300	181 (186)	24 (24)$^{=}$	82 (84)	99 (102)^{X}
	REGION TOTAL	148,100	208 (140)	46 (31)$^{=}$	104 (70)	104 (70)

TABLE E (continued-page 3)

REGION COUNTY	POPULATION	NUMBER IN DPC (ratio)	NUMBER IN GP/FP (ratio)	NUMBER IN PC (ratio)	NUMBER IN NPC (ratio)
IV SOUTHWESTERN					
Beaverhead	8,300	7 (84)	4 (48)	4 (48)	3 (36)
Broadwater	2,800	2 (71)	2 (71)^{x}	2 (71)	0 (-)
Deer Lodge	15,200	17 (112)	10 (66)^{x}	10 (66)	7 (46)
Gallatin	37,300	62 (166)^{x}	26 (70)^{x}	37 (99)^{x}	25 (67)^{x}
Granite	2,700	1 (37)	1 (37)	1 (37)	0 (-)
Jefferson	6,700	5 (75)	4 (60)^{x}	4 (60)	1 (15)
Lewis & Clark	36,900	68 (184)^{x}	13 (35)	32 (87)	36 (98)^{x}
Madison	5,800	5 (86)	3 (52)^{x}	3 (52)	2 (34)
Meagher	2,300	1 (43)	1 (43)	1 (43)	0 (-)
Park	12,100	12 (99)	5 (41)	7 (58)	5 (42)
Powell	7,500	5 (67)	4 (53)^{x}	4 (53)	1 (13)
Silver Bow	43,000	51 (119)	9 (21)$^{=}$	20 (47)	31 (72)^{x}
REGION TOTAL	180,600	236 (130)	82 (45)	125 (69)	111 (61)^{x}
V NORTHWESTERN					
Flathead	44,600	69 (154)^{x}	26 (58)^{x}	40 (90)	29 (65)^{x}
Lake	17,100	10 (58)	6 (35)	8 (47)	2 (12)
Lincoln	16,500	10 (61)	6 (36)	8 (48)	2 (12)
Mineral	3,500	2 (57)	2 (57)^{x}	2 (57)	0 (-)
Missoula	64,600	145 (224)^{x}	16 (25)$^{=}$	62 (96)^{x}	83 (128)^{x}
Ravalli	18,400	11 (60)	6 (33)$^{=}$	8 (43)	3 (16)
Sanders	8,100	5 (62)	4 (49)	4 (49)	1 (12)
REGION TOTAL	172,800	252 (146)	66 (38)	132 (76)	120 (69)^{x}
STATE TOTAL	745,800	926 (124)	271 (36)	488 (55)	438 (59)
SUGGESTED RATIOS	745,800	1106 (148.3+)	372 (50)	664 (89)	442 (59.3+)

x indicates that the ratio exceeds the suggested ratio for that category

= indicates a shortage of GP/FP's in the county, district, or area

⊕ indicates that the ratio is low enough to have the county designated as a primary care shortage area

Map E-1 illustrates the location and supply classification for the 56 counties in Montana. Fourteen counties are candidates for primary care shortage area designations, 33 are less than adequately supplied (but are not within range for designation as shortage areas), 5 have an adequate number of PC physicians, and 4 are over-supplied.

General/Family Practitioner Shortages and Surplus

The need or over-supply of GP/FP's in Montana is illustrated by Map E-2, where 21 counties have a shortage of GP/FP's and 18 are over-supplied. All of the counties with PC physician shortages also have GP/FP shortages, and have populations under 15,000. Counties with population over 50,000 show a marked decline in GP/FP ratios (but not in the actual number of GP/FP's), have nearly adequate, or excessive, PC ratios, but have excessively high non-primary care ratios. This tendency demonstrates that certain population bases are needed to support or attract a physician. In general, the more specialized the physician, the larger the population base required. Following is a suggested minimum population necessary to support various specialties.[9]

Specialty	Suggested Population per Specialist
General/Family practice	2,000
Internal Medicine	5,000
Pediatrics	10,000
Obstetrics/Gynecology	11,000
Anesthesiology	15,000
Dermatology	50,000
General Surgery	10,000
Neurology	100,000
Neurosurgery	150,000
Opthalmology	20,000
Orthopedic Surgery	75,000
Otolaryngology	50,000
Pathology	35,000
Plastic Surgery	50,000
Psychiatry	50,000
Radiology	30,000
Thoracic Surgery	100,000
Urology	20,000

Although these figures are from 1967, they are still accepted today as standards in physician manpower studies. The suggested ratios used in this study are computed from these standards.

Non-primary Care Physician Surplus

Some counties, such as Garfield and Prairie, have only two DPC physicians but are oversupplied according to the physician/population ratios. In both cases, the population base could adequately support just one physician. According to the physician survey, these physicians draw patients from other counties, most of which are medically under-served. All of the counties with populations over 25,000*, and Custer County (population 12,000) have one or more indications of over-doctoring. (Of the physicians in these counties, only 27 reside outside the major city in their county.) The population in these counties has easy access to these physicians; the surrounding counties have a more limited access. Map E-3 shows that some counties are very distant from these NPC centers, especially in the Northeastern portion of Montana. Some NPC physicians travel around the state visiting smaller hospitals in the surrounding counties. This type of practice should be encouraged. A comparison of the suggested and state ratio for NPC physicians indicates that overall there is an adequate supply of these physicians in Montana.

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*Lewis and Clark, Gallatin, Silver Bow, Flathead, Missoula, Cascade, Yellowstone (see Table F, appendix)

DISTRIBUTION OF MONTANA PHYSICIANS AMONG SPECIALTIES

The preceding tables do not indicate the distribution of physician specialties in the general categories of primary care and non-primary care. Table D provides an analysis of statewide needs and surplus in specific specialties. The right hand column indicates what the needs and surplus are for the specialties listed.

TABLE F

MONTANA PHYSICIANS IN DIRECT PATIENT CARE, BY SPECIALTY, SHOWING ACTUAL AND SUGGESTED PHYSICIAN/POPULATION RATIOS - 1977

Speciality	Total Physicians in Montana Number	Ratio/100,000 Population	Suggested Ratio per 100,000 population	Suggested Number of Physicians	Physician Need (+) Surplus (-)
I Primary Care Specialties					
General/Family Practice	271	36.3	50.0	373	+102
Internal Medicine	107	14.3	20.0	149	+ 42
Pediatrics	57	7.6	10.0	75	+ 18
Obstetrics/ Gynecology	53	7.1	9.0	67	+ 14
II Non-Primary Care Specialties					
Anesthesiology	41	5.5	6.7	50	+ 9
Dermatology	11	1.5	2.0	15	+ 4
General Surgery	98	13.1	10.0	75	- 23
Neurology	6	.8	1.3	10	+ 4
Neurosurgery	10	1.3	1.0	7	- 2
Ophthalmology	35	4.7	5.0	37	+ 2
Orthopedic Surgery	45	6.0	3.3	25	- 20
Otolaryngology	18	2.4	4.0	30	+ 12
Pathology	28	3.8	5.0	37	+ 9
Psychiatry	29	3.9	10.0	75	+ 46
Radiology	54	7.2	6.7	50	- 4
Thoracic Surgery	5	.7	1.0	7	+ 2
Urology	15	2.0	3.3	25	+ 10
Subtotal	883	118.4	148.3	1107	+224
All Others	43	5.8	?	?	?
TOTAL	926	124	148.3+?	1106*	+180*?

*difference due to rounding

Specialties are determined according to how physicians list the activity consuming the largest percentage of their professional time on their license. They may have additional specialties which they practice in a limited fashion. Physicians can change their practice according to patient demand for certain services in their area and never have this reflected when they renew their license. Since this data is based on licensure data which does not reflect the continual changes in location and practice, there can be no strict interpretation of the numbers indicated in any of these tables. The types of generalities that can and should be drawn from Table F are the following:

1. Montana has a need for:
    a. primary care physicians, particularly GP/FP's
    b. psychiatrists
    c. specialists in otolaryngology, anesthesiology, pathology and urology
2. Montana has a surplus of:
    a. general surgeons
    b. orthopedic surgeons
3. Specialties other than the ones just mentioned are adequate or near adequate supply.

PHYSICIAN JUDGMENT OF NEEDS

The questionnaire sent out to all Montana physicians (Appendix F) asked for a judgment of the present supply of physicians in their county as ideal, adequate, or minimally acceptable. Some included a fourth category - surplus. It was indicated by Montana physicians that Northwestern Montana has an adequate to over-supply of physicians, whereas there is an acknowledged need for more physicians in Eastern Montana. Table G summarizes the judgments.

The data in Table E and Maps E-1, 2, and 3, give a general indication of the access to medical care within the boundaries of any given county. It does not indicate the particular needs within the county; it is the prerogative of the local community to define its specific health manpower needs and work towards a solution with the local medical professional societies, the State Health Planning and Resource Development Bureau, and the Health Systems Agency. If counties are primary medical care shortage areas, they will have to work with these agencies should they desire National Health Service Corps assistance.

TABLE G: JUDGMENTS OF PHYSICIAN SUPPLY BY MONTANA PHYSICIANS - 1977

	% JUDGING SUPPLY AS:			% PHYSICIANS RESPONDING TO QUESTION**
REGION	IDEAL/SURPLUS*	ADEQUATE	MINIMALLY ACCEPTABLE	
Eastern	36.4/ 0.0	27.2	36.4	16
North Central	23.4/ 4.3	59.6	12.8	29
South Central	37.9/ 5.2	55.2	1.7	28
Southwestern	35.1/ 7.0	43.9	14.0	24
Northwestern	40.8/18.4	39.5	1.3	30
Overall	35.3/ 9.2	47.4	8.0	27

*This category was not included in the questionnaire, but some added it.

**Total number of physicians responding to the questionnaire was 575 (a response rate of 58%).

NATIONAL HEALTH SERVICE CORPS PHYSICIANS

The National Health Service Corps (NHSC) is a federal placement and loan-repayment program designed to place health practitioners--physicians, nurse practitioners, or physician assistants--in areas experiencing a shortage of health manpower (i.e., more than 3,500 people per physician). The practitioners are federally employed, and generally join the corps during their training and serve for two years in a shortage area in order to repay their educational loans.

Location of NHSC Physicians

The following is the number and location of NHSC physicians currently providing health care to Montana citizens,[11] and are included in the main physician inventory in this study:

TABLE H

City	County	M.D.'s	D.O.'s	Total
Superior	Mineral	1 Primary Care	1	2
St. Ignatius	Lake	1 Primary Care		1
Chester	Liberty	1 Primary Care		1
Lewistown	Fergus	1 Psychiatrist		1
Miles City	Custer	1 Psychiatrist		1
Glendive	Dawson	3 Primary Care		3
			TOTAL	9

NHSC will assign five more physicians by July, 1978, distributed as follows:*

Glasgow ----2
Roundup ----1
Harlowton --2

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*Personal communication: Marva Jean Collins and Roger Corbman, Public Health Advisors, National Health Service Corps, Region VIII Office, Denver, December, 1977.

Counties Eligible for National Health Service Corps

The Department of Health, Education, and Welfare recently designated primary medical care shortage areas for all 50 states, using 1974 statistics on population and physician number.[10] Table I lists the designations for Montana and compares it to the potential designations indicated by this study. Map I-1 illustrates this data and also indicates the location and number of National Health Service Corps physicians providing primary care services. (This excludes the 2 NHSC psychiatrists in Fergus and Custer counties.) DHEW designated towns, but this study is not designed for such specific designations.

DHEW has asked the states for updates on its data since these shortage areas designations form the basis for qualifying as a National Health Service Corps health care providers. The Montana State Department of Health and Environmental Sciences will therefore continually update its physician manpower file at the Bureau of Records and Statistics.

Doctors of Osteopathy

In 1974, the number of D.O.'s in the U.S. was 12,100, and the number of M.D.'s was 350,600.[12] Osteopathic physicians are trained at osteopathic schools*, receiving training similar to the basic M.D. training, but with special emphasis on manipulative treatment. States with osteopathic schools and/or hospitals have a greater D.O. population.

In Montana, 10 D.O.'s maintain an active license, but 12 do not have full practice rights--meaning that they are unable to prescribe drugs, perform surgery, or have hospital referral privileges. They are allowed to provide manipulative treatments as all osteopaths are trained to do.[14]

In the early 1940's, the Attorney General of Montana ruled that D.O.'s could no longer have full practice rights. When a referendum calling for restoration of these rights was defeated a few years later, most of the osteopaths left Montana. It was not until 1973 that an amendment was passed allowing the Montana D.O.'s who graduated since 1955 to take the same exam as M.D.'s (the FLEX exam), when applying for a license to practice in Montana, and thereby, have the same full practice rights.[15]

The seven D.O.'s with active licenses who graduated since 1955 and took the FLEX exam have full practice rights in Montana. Five of these are federal employees--three at the USAF hospital at MALMSTROM, one with the Indian Health Services, and one with the National Health Service Corps.

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*In 1974 there were 7 schools[13]

TABLE I: A COMPARISON OF PRIMARY MEDICAL CARE SHORTAGE AREAS IN MONTANA ACCORDING TO THE DEPARTMENT OF HEALTH EDUCATION AND WELFARE (1974) AND THE RESULTS OF THIS STUDY (1977)

REGION	COUNTY/TOWN(S)	TOWNS	CORRESPONDENT OF DESIGNATIONS ACCORDING TO PRESENT STUDY
I EASTERN			
District 1			
Phillips	entire county		yes
Roosevelt	towns only:	Wolf Point, Poplar	-
Valley	entire county		yes
District 2			
Garfield	entire county		no
Wibaux	entire county		yes
District 3			
Fallon	entire county		yes
Rosebud	entire county		yes
Treasure	entire county		yes
II NORTH CENTRAL			
Blaine	entire county		yes
Glacier	towns	Babb, Browning	-
Hill	towns	Rudyard, Gilford	-
Liberty	entire county		no
Pondera	towns	Valier, Dupuyer	-
Toole	entire county		no
III SOUTH CENTRAL			
Big Horn	entire county		yes
Golden Valley	entire county		yes
Musselshell	entire county		yes
Wheatland	entire county		yes
Petroleum	entire county		yes
Judith Basin	entire county		yes
IV SOUTH WESTERN			
Jefferson	town only:	Boulder	-
Gallatin	town only:	West Yellowstone	-

The NHSC D.O. and the two D.O.'s with full practice rights are included in the main physician inventory in this study. The following table illustrates the number, location, and practice rights of Montana D.O.'s:

TABLE J: OSTEOPATHIC PHYSICIANS IN MONTANA -- 1977

Location by County and Region	Osteopaths w/o full practice rights	Osteopaths with full practice rights	Total Osteopaths
1. EASTERN			
District 1			
District 2			
District 3			
Custer	1*	1	2
2. NORTH CENTRAL			
Blaine	1*	1 (PHS) Indian	2
Cascade	2*	3 (Federal) AF	5
3. SOUTH CENTRAL			
Yellowstone	2	0	2
4. SOUTH WESTERN			
Beaverhead	1		1
Deer Lodge		1	1
Lewis & Clark	1		1
Park	1*		1
Silver Bow	1		1
5. NORTHWESTERN			
Lincoln	1		
Mineral		1 (NHSC)	
Missoula	1		
	12 (4 semi-retired)	7	19 (4 semi-retired)

TABLE J: OSTEOPATHIC PHYSICIANS IN MONTANA -- 1977 (continued)

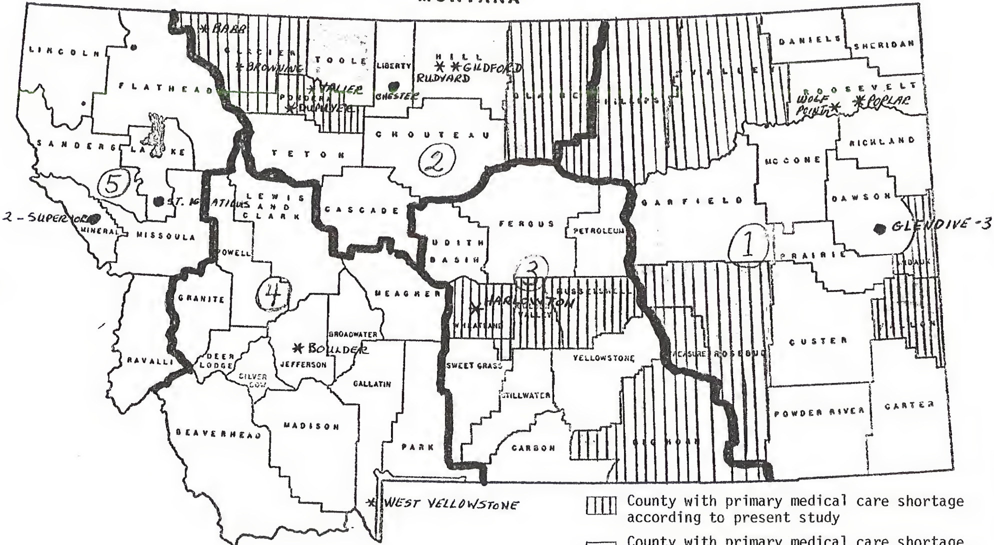
Median Age (according to survey results): 55

*Work less than 25 patients per week as reported by the survey sent out to osteopaths.

These regions are the five planning regions designated by the Montana Governor for the State Health Department.

MAP I-1: A COMPARISON OF PRIMARY MEDICAL CARE SHORTAGE AREA DESIGNATIONS AND THE CURRENT LOCATION OF NATIONAL HEALTH SERVICE CORPS PHYSICIANS** - 1977

MONTANA



▥ County with primary medical care shortage according to present study

☐ County with primary medical care shortage according to DHEW

● Location of NHSC primary care physician(s)

**Primary care physicians only (does not include the psychiatrists in Lewistown and Miles City--Fergus and Custer Counties respectively).

FEDERAL PHYSICIANS

Within Montana there are population groups eligible for special health care delivery programs--veternas, Indians, and Malstrom Air Force personnel and their families. All of the 55 physicians in these health care programs are federal employees, and they do not render medical care to the general public. Therefore, they are treated separately from the non-federal physicians in this study.

Veteran's Administration Physicians

In 1977 there were an estimated 104,000 veterans in Montana, all of whom were entitled to V.A. hospitalization benefits. Of these, approximately 37,000 are in the service area of the Miles City V.A. Hospital. This hospital has a bed size of 116 and has 7 physicians on staff. The Fort Harrison V.A. Center with 15 physicians on staff has an estimated 66,950 veterans residing in its catchment area. It is estimated that approximately 20% of the 66,950 veterans in the Fort Harrison V.A. Center's catchment area utilize hospitalization benefits. The most common types of referrals from federal hospitals to non-federal facilities in Montana are to community nursing homes under V.A. contract.[16]

The following table summarizes the data available on V.A. physicians:

Table K

V.A. PHYSICIANS IN MONTANA - 1977

	Number of Eligible Veterans per V.A. Physician	V.A. Physician/ 100,000 Eligible Veterans	V.A. Physician/ Utilizers (20% Utilization)
Miles City	7/37,000	19	112
Fort Harrison	15/66,950	22	95
All V.A. Services in Montana	22/104,950	21	105

If the percent of utilization is not taken into account, the ratio of V.A. physician/100,000 eligible Montana veterans would be within the criteria range for designation of health care shortage areas by the federal government.

Indian Health Service

The Federal government provides a comprehensive health program to the 30,000 American Indians living on or near reservations in Montana. The program includes preventative, curative, rehabilitative, and environmental health services. As of August 30, 1977, there were 23 physicians in Indian Health Services (IHS) located in the following areas:[17]

TABLE L

LOCATION, NUMBER AND TYPE OF INDIAN HEALTH SERVICE PHYSICIANS - 1977

Browning	6 M.D.'s	6 - Total
Crow Agency	6 M.D.'s	6 - Total
Harlem	2 M.D.'s 1 D.O.	3 - Total
Lame Deer	3 M.D.'s	3 - Total
Box Elder	2 M.D.'s	2 - Total
Wolf Point	1 M.D.	1 - Total
Poplar	2 M.D.'s	2 - Total
		23 - TOTAL

There are two types of physicians in IHS--Civil Service physicians, who must maintain a valid state license, and commissioned corps physicians of the Public Health Service, who are not required to have any license. Both types of physicians tend to be young and generally stay only two years at the assigned site.

Table M, Part I, reflects the total number of Indians served (on and off the reservation) by reservation health services. Table M, Part II, pertains to the number and location of referrals to in-state physicians/clinics and hospitals through the Contract Health Services, which enables Indians to obtain care not provided by their reservation health services.[18]

TABLE M: INDIAN HEALTH CARE - 1977

Part I: INDIAN PEOPLE SERVED BY RESERVATION HEALTH SERVICES - 1976

Service Unit	Reservation Population	Nearby Population	Total
Blackfeet	5,425	623	6,048
Crow	3,929	1,480	5,409
Northern Cheyenne	4,232	88	4,320
Flathead	4,036	1,382	5,418
Fort Belknap	1,327	769	2,096
Rocky Boy's	1,543	652	2,195
Fort Peck	3,794	817	4,611
TOTAL	24,286	5,811	30,097

Part II: REFERRALS THROUGH CONTRACT HEALTH SERVICES MADE IN 1976

City	Hospitals No. of Referrals	Physicians/ Clinics No. of Referrals	Total	General Location
Browning (Blackfeet)	337	672	1,009	Blackfeet Reservation & Immediate Area
Crow Agency (Crow)	266	1,582	1,848	Crow Reservation & Immediate Area
Harlem (Ft. Belknap)	234	487	721	Fort Belknap & Reservation & Immediate Area
Poplar (Ft. Peck)	1,289	1,946	3,235	Ft. Peck Reservation & Immediate Area
St. Ignatius (Flathead)*	1,434	21,566	23,000	Flathead Reservation & Immediate Area
Lame Deer (No. Cheyenne)	134	475	609	No. Cheyenne Reservation & Immediate Area
Box Elder (Rocky Boy)	244	561	805	Rocky Boy Reservation & Immediate Area
TOTAL	3,938	27,289	31,227	

The above figures are obtained from FY 1976 reports because FY 1977 data are not available.

*There are no IHS physicians at this site

The ratios of population per physician for the Indians on and near the reservations are as follows:

TABLE N: PHYSICIAN/POPULATION RATIOS
FOR INDIAN HEALTH SERVICE SITES - 1977

	Number of PHS Physicians Per Eligible Indians	PHS Physicians/ 100,000 Eligible Indians
Browning (Blackfeet)	6/6048	99
Crow Agency (Crow)	6/5409	110
Harlem (Ft. Belknap)	3/2096	143
Lame Deer (No. Cheyenne)	3/4320	69
Box Elder (Rocky Boy)	2/2195	91
Poplar (Ft. Peck)	3/4611	65
Wolf Point (Ft. Peck)	(Same as Poplar)	
St. Ignatius (Flathead)	0/5418	--
TOTAL	23/30,097	76

Percent utilization figures were not available from Indian Health Services in Billings. Even so, the service ratio of Public Health Service physicians per 100,000 eligible Indians is well above the ratio used as a criteria for health care shortage area designations, except for St. Ignatius, (which is why the number of referrals through Contract Health Service is so high there).

Malmstrom Air Force Base

Active duty members and their dependents number 11,106 at Malmstrom Air Force Base in Great Falls. Retired members and their dependents number 3,307. Therefore, the total number of personnel eligible for military medical care at Malmstrom is 14,413. Of these, 3,406 are known Montana residents. This means that 11,007 are not included in the state and county population statistics used in this study. There are a total of 10 physicians* providing care at the USAF Hospital at Malmstrom, meaning the physician/100,000 population is 69. However, the percent of eligibles who utilize these services is 52%.[19] With this in mind, the effective physician/100,000 utilizers is 135. With or without utilization rate the ratios indicate adequate health care coverage.

The total number of known inpatient and outpatient referrals was 1,528 last year. The largest number of inpatient referrals is in obstetrics and gyn/surgery, since there are no gynecologists or obstetricians at the Base Hospital. The outpatient referrals under CHAMPUS (military health insurance) could not be estimated.

*There are five general medical officers, one internist, two general surgeons, one psychiatrist, and one flight surgeon.

PROJECTION OF PHYSICIAN SUPPLY AND NEED IN 1985

The methodology for projecting the supply of direct patient care physicians involves estimating the inflow and outflow of physicians by 1985.[20] A trend analysis of new physician licensures indicates that Montana will gain 244 physicians by 1985. Labor force separation rates for Montana are one way to measure the outflow of physicians due to retirement, relocation to another state, and death. Calculations using the labor separation rates provided by the U.S. Labor Department[21] indicate that Montana will lose 292 physicians by 1985. If this loss occurs, the 1985 physician/population ratio for Montana will be 62/100,000 civilians, indicating a large drop in physician accessibility for the State.

The projected needs provide estimates of how many additional physicians must be attracted to Montana in order to: 1) maintain the present level of access to health care, or, 2) attain the suggested level of access to health care. In order to maintain the present level of health care, the present physician/population ratios applied to the 1985 projected population indicate that the State must have a net inflow of 135 physicians in direct patient care--72 primary care physicians are needed (37 being GP/FP's) and 71 non-primary care physicians are needed.

In order to attain the suggested level of access to health care, the suggested physician/population ratios are applied to the 1985 projected population. These calculations indicated that a net inflow of 352 direct patient care physicians is required. There should be 279 new primary care physicians (180 being GP/FP's), and 73 new non-primary care physicians. The projection data is summarized in Table O.

TABLE O: PROJECTIONS FOR MONTANA OF THE SUPPLY AND NEED OF DIRECT PATIENT CARE PHYSICIANS IN 1985

Projected 1985 supply*

Projected inflow by 1985:	244
Projected outflow by 1985:	-292
Projected 1985 supply:	-48

Total number of DPC and ratio based on projected supply 536 (62)

Projections of Montana's needs in 1985

Present**	Number in DPC (ratio)	Number in GP/FP (ratio)	Number in PC (ratio)	Number in NPC (ratio)
1. Actual	926 (124)	271 (36)	488 (65)	438 (59)
2. Ideal	1,106 (148.3)	372 (50)	664 (89)	442 (593)
3. Difference	180	101	176	4
Future**				
1. Actual	1,069 (124)	310 (36)	560 (65)	509 (59)
2. Ideal***	1,278 (148.3)	431 (50)	767 (89)	511 (59.3)
3. Difference	209	121	209	2
Net Inflow Required	DPC	GP/FP	PC	NPC
1. to maintain present ratios	135	37	72	71
2. to attain suggested ratios	352	160	279	73
3. Difference	217	123	207	2

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*These figures are from trend analysis of new licensures and from labor force separation rates. (Source of Methodology: Methodological Approaches for Determining Health Manpower Supply and Requirements, Vol. II, Practical Planning Manual, H.M. Driesberg, et al., Washington D.C. DHEW Publication No. (HRA 76-14512).

**Based on projected population figures: 1975-745,800; 1985-862,369.

***Obtained by subtracting future ideal from the present and actual numbers.

A strict application of the physician/population ratio to project the future need of physicians may ignore the effect of changes in the delivery system, biomedical advances, and socioeconomic conditions. These factors affect the demand for health care and the amount of health care services provided. Using the physician/population ratio also is unsatisfactory because population density changes are difficult to accurately predict on a long-term basis. By making the projections only for 1985, the accuracy is improved.

The required net inflow and projected inflow are significantly different for Montana. The increase in the number of medical and osteopathic students graduated from the schools across the country may affect the inflow rate more than what is projected by the trend analysis of new licensures.

The Bureau of Health Manpower projected that the supply of physicians would increase from 159/100,000 people in 1970 to 237 per 100,000 people in 1990.[22] Observers contend that with the increasing number of new practitioners, without a change in the demand for physician services, and with an increase in efficiency of services due to group practices and the use of physician extenders, there will be no future shortage of physicians. Others see that the trend of increased number of physicians beginning practice will be reversed since: "...the cost to motivate students toward careers in medicine is increasing; dissatisfaction with medical care and anti-physician attitudes are spreading; federal and state subsidies for medical education are being reduced or eliminated; the number of foreign medical graduates practicing in this country is being reduced; and the number of malpractice suits is increasing."[23]

There is conflict in determining how the future need and supply of physicians will be affected, but the projections made in this study indicate a need to train, recruit, and retain primary care physicians in Montana. Therefore, these issues will be addressed in the following section of this report.

Medical School Admissions

Physicians with a rural background are two to three times more likely to settle in non-metropolitan areas than physicians with urban backgrounds. A 1973 study of medical students found that non-metropolitan students were under-represented; their lower acceptance rate was due to their under-representation in the applicant pool. Students with rural backgrounds also tended to have lower MCAT (admission test) scores and academic grade averages. If medical schools emphasize the selection of students with rural backgrounds and expand their programs in the family medicine, it will likely lead to an increase in the number of rural physicians.24

The greatest potential supply of physician manpower for Montana lies in its citizens who are potential or actual medical school students and graduates. Recent data indicates that there are 130 Montana students in medical schools around the country.25 There are a total of 114 medical schools having an enrollment capacity of about 51,000 students.26 In comparison to other states, Montana has a relatively small number of medical students since it is one of six states without a medical school. Following are the number of students from states without medical schools who are presently studying medicine:27

> Alaska, 40; Maine, 120; Idaho, 116; Montana, 130; Delaware, 129; Wyoming, 82. Wyoming is planning to start a medical school. Neighboring North Dakota with a new medical school has 238 state residents enrolled in medical schools.28

The following table summarizes the available data on the application/acceptance trend for Montana citizens, indicating how the percent accepted from this state ranks in comparison to applicants in the 49 other states, Canada, foreign, and U. S. Territories (1 to 54 with 54 being the lowest percent accepted):29

TABLE P: MONTANA MEDICAL SCHOOL APPLICANTS 1969-1976

Year	ACCEPTED					NON-ACCEPTED			TOTALS	
	Rank	# of men	# of women	Total	%	# of men	# of women	Total	Total # of applicants	Total # of applications
1969-70	52	25	2	27	31.8	54	4	58	85	452
1970-71	30	29	4	33	47.8	33	3	36	69	471
1971-72	39	27	2	29	40.3	40	3	43	72	535
1972-73	40	31	7	38	35.8	63	5	68	105	841
1973-74	48	25	3	28	27.2	69	6	75	103	893
1974-75	28	22	11	33	35.5	54	6	60	93	903
1975-76	24	36	5	41	38.0	58	9	67	108	1,033

Montana ranked 52 in 1969 among Canada, foreign and U. S. territories and states--a total of 54, and it reached its best ranking in 1975 (24th among 54), as well as the highest number of total applicants and accepted applicants (a comparable form for 1976 figures could not be located).

Two programs designed to increase the acceptance opportunities into medical school for Montana residents are WICHE (Western Interstate Commission for Higher Education) and WAMI (Wyoming, Alaska, Montana, and Idaho--an acronym for a regional acceptance program by the University of Washington School of Medicine).

WICHE (Western Interstate Commission for Higher Education)

Since 1953, the WICHE Student Exchange Program (SEP) has enabled western students (Alaska, Arizona, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming) to obtain access to professional educational opportunities which their home states do not offer, but it is not a scholarship program. The professional fields available to Montana students are medicine, dentistry, veterinary medicine, dental hygiene, physical therapy, occupational therapy, optometry, and podiatry. The WICHE program is designed to increase and improve the opportunities for higher education in the thirteen western states, which will increase the number of specialized manpower in these states. The local WICHE certifying officer in Helena certifies residents of Montana who apply to participating schools in one of the fields listed above. The schools acknowledge the WICHE certification and give these applicants preference over other out-of-state residents (or will only consider out-of-state applicants with the WICHE certification), but it is no guarantee for acceptance into their programs. The Montana State Legislature reimburses the school that accepts an applicant by paying the institutional support fee which is normally paid by the schools' state legislature. The yearly number of Montana students that have pursued their medical education through SEP has ranged from 1 in 1953, when the program was started, to 61 in 1973. The cost to the state for those years is $3,000 and $295,538 respectively. In 1977 there were 81 applicants for certification (this number includes WAMI applicants, as well), and 10 of them were accepted at WICHE schools. Currently there are 46 Montana students in medical schools under the WICHE-SEP program.30

TABLE Q

MONTANA MEDICAL SCHOOL APPLICANTS
CERTIFIED AND ACCEPTED
UNDER THE WICHE-SEP PROGRAM
1966-1977

	Number of pre-medical Students Applying for Certification	Number of Certified Students Accepted at WICHE Schools	Number of Certified Students Accepted into WAMI	Total WICHE Certified Students in Medical School	COST
1966-67	31	15	--	33	$ 65,333
1967-68	28	11	--	33	75,000
1968-69	40	13	--	40	100,000
1969-70	55	13	--	43	120,000
1970-71	47	19	--	52	153,900
1971-72	57	18	--	50	150,000
1972-73	74	14	--	50	150,000
1973-74	55	10	7	61	295,668
1974-75	72	8	9	59	292,500
1975-76	80	5	20	52	271,334
1976-77	89	12	20	51	275,000
1977-78	81 (includes WAMI)	10	20	46	552,000

1978-79 Budget for 36 students - $444,000.
(Figures provided by Leoti Waite-Commission for Higher Education-Helena, Mt.)

Through 1970 there were 55 students who graduated from WICHE schools. A recent study by WICHE found that of the 43 they could locate, only 9 (or 21%) were practicing in Montana. Six SEP students that graduated from other states are located in Montana, raising the percentage of SEP graduates practicing in Montana (as compared to the total number sent) to 35%.31 No data is available on the WAMI program since it has only been operating since 1972, not yet long enough to produce graduates. The importance of the program is to increase the opportunities for medical studies for Montana's students.

WAMI (Wyoming, Alaska, Montana, Idaho)

The University of Washington School of Medicine began accepting students from Montana under its WAMI program in 1972 on a quota basis. Since 1975 a standard number of 20 students are accepted yearly from Montana (see Table Q). Acceptances are based on the student's record; the home town is not considered by the selection committees in Montana.

The first year of study is spent at Montana State University in Bozeman. The state allocates 1.4 million dollars to cover costs of the students' education and the clinical costs of the four WAMI clinics around the state.32 The cost for WICHE and WAMI combined are vastly lower than the cost of building and maintaining a medical school in Montana. For example, the yearly cost to operate the medical school in North Dakota is 9 million dollars. The state pays 4.5 million and federal money takes care of the other 4.5 million.33

Doctors of Osteopathy

The Montana Osteopathic Association supports Montana students in their application to osteopathic schools by providing a letter of endorsement from an osteopathic physician. Osteopaths are trained for rural practices and most of them are general practitioners (all 19 osteopaths in Montana are GP's).34 Osteopaths could be encouraged to come up with an endorsement program similar to WICHE that also has state support for Montana students wishing to study osteopathic medicine and return to the state to set up a practice. (There are no osteopathic schools in western states. Since WICHE serves only western states, the program suggested could be like WICHE, but not an extension of the WICHE program itself.)

WAMI Primary Care Clinics--Preceptorship Programs

Six-week clerkships at WAMI primary care clinics* around the four-state region are offered to third and fourth year medical students and residents from the University of Washington Medical School. These clerkships are a type of preceptorship program intended to give students favorable experience in practicing primary medical care in remote sites.

"Preceptorship" refers to an apprenticeship arrangement which affords the student practical experience away from a classroom situation. The preceptor is a full-time practitioner who serves as a role model for the WAMI clinics.36

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*WAMI clinics do not have to be in one facility or clinic; they can involve a number of individual physician offices in a city or area.

TABLE: R STUDENT AND RESIDENT PARTICIPATION IN MONTANA WAMI CLINICS, 1976-77

CLINIC	NUMBER OF STUDENTS	NUMBER OF RESIDENTS
Billings	11	3
Missoula	2	7
Whitefish/Kalispell	4	5
Great Falls	8	5
TOTAL	25	20

There has been criticism about the location of WAMI clinics in these cities where physicians are adequately or over-supplied. In order to have a clinic established in an area, WAMI requires that three full-time practitioners be available to provide the training. One physician surveyed for this study challenges this number, saying it is ideal, but not essential, if a full-time practitioner is found who is interested in being a preceptor. Exposure to rural and shortage areas through a preceptorship program can be designed so the appeal of actually establishing a practice in that area is increased.

Eastern Montana (in particular, Glendive) is one of the areas in the country that medical students can choose for a summer preceptorship through the Technical Assistance Program which is offered by the American Medical Student Association Foundation based in Chicago, Illinois. Students learn of these preceptorship programs through the Foundation's journal.37

Family Practice Residency

Establishing a family practice residency program in Montana is likely to increase the number of physicians who would set up practice here, and, hopefully, these practices would be established in shortage areas. One 1971 survey showed that there was a 72% retention rate of M.D.'s who got their degree and did their residency in the same state; the rate was 85% if the state in question was the doctor's home state.38 A later study found that physicians tend to locate their practice near the place where they were reared or received their medical training.39

Significant commitment from a rather large group of physicians is required in establishing a residency program. The minimal number of students who will be trained in the program is 12 per year. The present plans are to have the first year training of four residents in Spokane, and the next two years in Billings. Eventually, all three years should be in Billings.40 Idaho, also a WAMI state, already has a family practice residency operating in Boise.

Even though Billings does not need more physicians, it is located in Eastern Montana and has the physician population and facilities necessary to support a residency program. It is hoped that residents trained in this program will go into Eastern Montana to set up their practices. But to increase the odds of this happening, the program needs a unique design. Students should have experience in actual rural practices for at least a short period of time. Finding rural physicians who are willing to serve as preceptors, and rotating the students around to these various rural practice sites would be excellent experience for the student and provide additional coverage for the physician serving as a preceptor and his or her community. There are many programs being developed at this time that are variations on this theme, and would work well in Montana.41

PROGRAMS AND POLICIES TO ATTRACT AND RETAIN PRIMARY CARE PHYSICIANS

In addition to educational opportunities, placement and referrel services and incentives for practice location are needed in order for shortage areas to attract and retain primary care physicians.

Placement and Referral Services*

Rural Montana communities seeking physicians have generally tried to do their own recruiting or else have sought help from placement programs such as Western Health Systems, Inc., the Montana State Department of Health and Environmental Sciences (Bureau of Health Planning and Resource Development), the Montana Medical Association, the Health Systems Research Institute in Salt Lake City, the National Health Service Corps, or smaller private programs.

Western Health Systems, Inc.

The Western Health Systems, Inc. (WHSI) is a referral and placement program that receives a portion of the federal grant money blocked out to the Old West Regional Commission comprised of the governors of the states WHSI services. Those states are Montana (only the eastern third), Wyoming, Nebraska, North Dakota, and South Dakota. Since it began its operations in July 1976, WHSI has placed a physician in Sidney, Montana, and three nurses at the Miles City V.A. Hospital. There are several placements currently being negotiated, but the placement process often takes 6-12 months. To help the communities retain newly acquired health care providers, WHSI provides counseling services to the communities.[42]

Montana State Department of Health and Environmental Sciences

Any inquiries from practitioners interested in practicing in Western Montana are forwarded by WHSI to the Montana State Department of Health and Environmental Sciences, Bureau of Health Planning and Resource Development. Those inquiries are matched to communities, hospitals, and individuals who have expressed a need for a given health care practitioner.[43]

Montana Medical Association

The Montana Medical Association (MMA) maintains an active physician referral service. All inquiring physicians are asked to send their bibliography, which is sent out to the areas needing the particular services offered by that physician. All inquiries are listed in the bi-monthly bulletin distributed to approximately 120 subscribers. The MMA gets about 20 requests per month from out-of-staters or foreigners, directly or through the Western Health Systems, Inc. and the Montana State Department of Health and Environmental Sciences.[44]

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* For the address of organizations offering these services, see Appendix G.

Health Systems Research Institute

The Health Systems Research Institute (HSRI) in Salt Lake City is a non-profit organization operating an innovative health care delivery system and hospital management program since April 1974. Five Montana communities have utilized HSRI services. Cut Bank has a contract for a three-physician clinic and the hospital management service. Shelby utilizes the hospital management services and a two physician clinic. Big Timber, Poplar, Harlowton, and Yellowstone National Park utilize HSRI physicians.

HSRI has expanded their program to include locum tenens service-a physician backup service. This service makes it possible for a physician in a rural community to take time off for continuing education, vacation, or for other reasons. The community can contract for temporary backup services from HSRI, and one of the ten physicians employed by the Institute will be sent to the community to provide services.

HSRI has had an estimated 80% success rate. Full community support is absolutely necessary to make this type of program work. The physician must be well suited to HSRI's system, and have a life style which is compatible with the community's.

The benefits offered by HSRI to the physician (i.e., guaranteed annual income, three weeks vacation, every third weekend off, backup services, two weeks of paid continuing education, free malpractice insurance, and a retirement program) allows HSRI to be very selective. They hire only one in 100 applicants. The physicians do not have to invest their own capital to set up a practice or hire support staff--the community takes care of this. HSRI physicians have access to a 24-hour phone referral system to the University of Utah Medical Center, whose faculty provide educational and consulting services for HSRI physicians.

Besides providing the practice site for the physician, the community also pays (indirectly) for the incentives offered by HSRI to their physicians. The community pays HSRI on a yearly basis, and any revenue exceeding the contract rate, generated by the medical services provided, is returned to the community. The Institute's Health Service Programs are designed to eventually improve the communities' economy by decreasing expenditures for commercial out-of-town purchases (made when citizens go to a large city for health care they could be receiving in their own town), decreasing subsidy payments for community hospitals, and increasing community income generated by health care services to patients carrying some type of insurance.45

Cut Bank became involved with HSRI after having just built a new hospital which they could not use, because they were unable to recruit a physician. So many people went out of town for their health care. It would have cost the community $100,000 to $200,000 a year to keep the new hospital open. The old hospital averaged five patients a day. The new hospital, under HSRI management, averages 12 patients a day. Without HSRI's assistance, the hospital would have had to close.46 A lot of rural communities run into a similar type of vicious circle--they feel they need a hospital to attract a physician, yet they cannot keep a hospital operating without a physician, or else the county loses large sums of money.

Glacier County's contract with HSRI has totaled $714,000 over a 2½ year period, during which time Cut Bank had one HSRI physician for 1 year and 7 months, and 3 physicians for the remaining 8 months. The clinic generated $514,000 in cash receivables, and should the clinic close today, the county would receive $95,000 in additional receivables. The actual cost to the community is $105,000 over 2½ years. Sentiments in Cut Bank are that the revenues generated by the clinic will eventually match and exceed the county's investment.47

National Health Service Corps

The National Health Service Corps (NHSC), a branch of the Public Health Service Corps, was created by the Emergency Health Personnel Act of 1970 (PL 91-634). It is designed to deal with the country's maldistribution of health manpower by working with communities which have, or will have, a primary medical care shortage area. To qualify for NHSC assistance, a community must justify its designation as a shortage area by working with the State Health Planning and Resource Development Agency (in Montana, the Bureau of Health Planning and Resource Development) and the Health Systems Agency, in assembling information about its health care needs, available manpower, and health care resources.

Until 1978, shortage area designations relied almost exclusively on the practitioner to population ratios. The old criteria was one practitioner to 4,000 or more (a physician/100,000 population ratio of 25). The new criteria is one to 3,500 or more (a physician/100,000 population ratio of 28.5). If there is no more than one practitioner to 3,000 people (a physician/100,000 population ratio of 33.3), the area may still qualify for assistance if other indicators of needs are significant (i.e., infant mortality rate, percent of population below poverty level, and percent population over 65).48 The counties qualifying for NHSC primary medical care physicians in Montana are listed in Table I and Map I-1. The NHSC has different ratio criteria for placing dentists, psychiatrists, nurse practitioners, physicians, and optometrists.

The community agrees to provide the office and supplies, as well as hire and supervise the support personnel. The NHSC pays the physician's salary, assists the community in dealing with any problems arising from managing the practice, and most importantly, will assist the community with the NHSC physician should they both wish to establish an independent practice in the community. The retention rates have risen from 2% in 1972 to 30% in 1975, because NHSC tries to match the community and physician more carefully, and works closer with the community.49 The community cost in starting an NHSC practice site varies according to whether a hospital or clinic site is already there for the physician. Minimal start-up costs for the equipment and supplies runs about $10,000 to $15,000. Communities needing start-up money can apply for assistance through the Rural Health Initiative Program, which makes NHSC programs more feasible for economically depressed communities. For one doctor, it costs the community about $50,000 a year.50 (This is only a rough estimate.) NHSC helps the community budget and any revenues generated above the community's costs go towards reimbursing NHSC for the physician's salary.

Rural Health Initiative

The Rural Health Initiative (RHI) is a federal program which integrates and coordinates the services offered by such programs as the National Health Service Corps and Health Underserved Rural Areas (HURA).

If a community does not meet the criteria for designation as a primary medical care shortage area, thereby not qualifying for NHSC assistance, it may still be eligible for federal assistance under the RHI program. Priority for grants is given to those communities meeting the greatest number of the following designations:51

1. Medically underserved areas
2. Health Manpower shortage areas
3. High migrant impact areas
4. High infant mortality areas

If a community does not meet these designations, it may still be eligible for Health Underserved Rural Areas (HURA) program. RHI and NHSC services are basically designed for communities having no medical practice, and they are especially concerned with establishing primary care practices. RHI grants are available for creating primary care facilities, while HURA grants are meant to be used in expanding existing practices in underserved areas. HURA monies come from Medicaid's research and development fund which may be dropped soon.52

Three RHI programs are being planned to service all 17 of Eastern Montana counties.53 Glendive, in Dawson County, and Miles City, in Custer County, have already received RHI grants. Recruiting efforts for both of these cities is still ongoing, since retirement are still a problem. Custer County's physician/population ratio shows it is now overdoctored. But the intent is to make Miles City and Glendive medical care centers for the surrounding counties, and not just their respective county populations. Malta, in Phillips County, is being proposed as a third site for RHI funding. Phillips County is presently a primary medical care shortage area, as are Blaine and Valley, which border it. Even if the intentions are to create medical care centers in Eastern Montana with RHI and NHSC assistance, continuity of care may be affected by the turnover rate of physicians recruited for these areas.

INCENTIVES FOR SHORTAGE AREA PRACTICE

Placement services realize that by improving the desirability of the practice location they are more apt to attract and retain good health care providers. Eastern Montana towns that get a physician have often had difficulties retaining him or her. A potential practice site must have economic promise. The physician may have difficulties in: 1)finding qualified staff, 2) dealing with expectations for 24-hour coverage, 3) having no back-up coverage, 4) being isolated from peers, 5) having difficulty in getting continuing medical education, and 6) having difficulties setting up a referral network with specialists in larger cities. They may also have to deal with a spouse's dislike for rural life, and often, the non-utilization of the physician's services by community members.

Communities and placement programs having successfully attracted a physician have generally provided the following incentives:

1. a guaranteed income
2. a practice site and qualified ancillary personnel
3. scheduled vacation time
4. back-up coverage
5. access to continuing medical education that is tailored to the needs of the shortage area practitioner
6. 24-hour phone referral system to large medical centers
7. orientation of the spouse to rural life
8. community support and willingness to utilize the new physician
9. year-for-year loan forgiveness programs for students who agree to serve in the community

Since compatibility of life style is an important factor in any successful placement (and retainment), students from shortage areas should be encouraged to become physicians, and other health professionals, through health career education programs and the availability of a loan forgiveness program. In the long run, such a program would be effective. Meanwhile, communities should strive to be selective in their recruitment process and keep in mind the need to find a physician who is suitable to their needs and way of life, and who will deliver high quality care.

The rapid increase of new developments in medicine today make continuing medical education (CME) a necessity if a doctor is to provide high quality care. For this reason, CME is now a requirement for membership in the Montana Medical Association. CME programs in Montana are coordinated by the Montana Medical Education and Research Foundation in Great Falls, the Western Montana Health Education Council in Missoula and the Inter-hospital Learning Center in Billings. Physicians in rural areas have difficulty in attending CME sessions in other states or even in some of the larger Montana cities, because they cannot leave without some back-up coverage. HSRI now offers Montana communities the opportunity to provide back-up coverage for its physicians, thus, alleviating one drawback to rural and shortage area practices.

WAMI is currently experimenting with video satellite broadcasts to Fairbanks, Alaska, and Bozeman, Montana, for use in continuing medical education. The first of eleven broadcasts is scheduled for January, 1978. Should these broadcasts be effective learning devices, physicians can go to Bozeman rather than Dallas, Texas.56 If the proper equipment could be circulated (a van with video tape equipment?) this form of CME could be brought right to the rural practitioner making it very accessible. Such a program would alleviate one of the disadvantages of rural practice making such practice sites more attractive.

North Dakota offers all of its physicians use of an educational telephone network, designed for phone conferences. The phone line is used for conferences, teaching, and educational programs.57 It could also be used for consulting specialists at the medical school. Such a communication system would be a valuable link-up between the rural practitioner and the medical centers in-state or out-of-state, and it would also serve as an incentive to practice in a rural area since the practitioner would no longer be, or feel, as isolated as before. Such a program could augment the WAMI video satellite broadcasts.

IMPROVING ACCESS TO RECRUITMENT SERVICES

The placement and referral programs discussed earlier offer many of the incentives mentioned earlier. But the needs of Montana citizens in physician shortage areas could best be met by a program which coordinates the existing recruiting and placement program and expands the services available to the entire state, helping communities decide what they need and can afford.

A possible model for such a referral and placement program is the Community Clearinghouse in Seattle, Washington, which offers Washington, Oregon, Idaho, and Alaska (Region X) progressive and effective recruitment and placement of primary health care providers, e.g. primary care physicians, physicians' assistants, and nurse practitioners. The success of the program has been a result of full cooperation from the respective professional medical associations, whose representatives serve on the advisory committee for the clearinghouse and ensure the decisions made are in the best interests of the community.54

A representative is sent to the community contracting for placement services, and helps them form a recruiting committee which will define the community's needs and resources. The community, in cooperation with local health care providers, may feel its needs can be met by a nurse practitioner, physician's assistant, or even cross-coverage by area physicians. Any placement results in an ongoing communication between the clearinghouse, the community, and the health care provider.

Clearinghouse helps the community choose the right health care provider and also provides back-up service. Continuing education programs and consulting services with specialists offered by clearinghouse are tailored to the needs of the individual rural health care provider. Currently there are plans to launch a program for the spouse of the potential health care provider, designed to prepare them for rural life styles.55

Clearinghouse recruits non-physician practitioners for communities which are too small to support a physician, or that desire such an alternative. What alternatives are there for Montana communities unable to attract and/or retain a physician? What are the health resources in physicianless communities, and how can they be utilized? There are a large number of unemployed licensed nurses around Montana whose training could be expanded so they could treat the health needs of citizens in their rural community, providing the services are within the laws governing the practice of nursing. All communities without quick access to a physician need a strong emergency medical system and will need help in establishing linkages with nearby medical personnel and facilities in order to develop an adequate health care program for themselves.

Physician extenders (PE's), physician's assistants (PA's), and nurse practitioners (NP's) are relatively new to the health care scene, and conceptually could be used to relieve the shortage of primary care services in rural areas. PE's differ from other ancillary health professionals, because their training allows them to provide services (under some form of supervision) which used to be exclusively provided by licensed physicians--i.e. well-patient examinations (well-baby clinics, preventive medicine, physical exams) and medical history workups. In a typical practice, PE services may not always reduce costs, but they generally allow the physician to see more patients, obtain CME, or give more care to seriously ill patients.58

Physician assistants often have had prior experience as medical corpsmen in the armed services, but all of them are graduates of a PE training program and/or have passed the Primary Care Certifying Examination.59 The results from the physician survey revealed less than 20 PA's are employed by physicians in Montana, mainly because of the absence of legislation defining their practice rights.

In contrast, Montana has about 100 nurse practitioners.60 Nurse practitioners are registered nurses who have received training allowing them to serve in expanded roles in such fields as pediatrics, geriatrics, and obstetrics. Their functions are defined by the Nurse Practice Act in Montana.

In Canada and states such as Arizona and Colorado, physician extenders have been used for rural health clinic services under remote supervision of a licensed physician. Recent federal legislation (HR 8422) has authorized medicare/medicaid coverage for PE services in rural clinics on a cost reimbursable basis.61 Practices staffed by PE's in remote areas tend to be underutilized, although studies also indicate patient satisfaction with the service provided. The reason cited for this tendency is that people desire the best possible care when they are ill, so they tend to use the remote clinics for minor problems, and travel to out-of-town physicians if they have a major problem.62 (PE's would have to refer a seriously ill patient to an out-of-town doctor anyway.)

In Montana, one rural health care delivery system exists which is run without the physical presence of a physician, but which has the support of Missoula physicians. The SOS Health Center at Seeley Lake is a model nurse practitioner practice formed by the residents of Seeley Lake, Ovando, and Swan Lake in 1970. These isolated mountain communities are located about sixty miles from the nearest physician and medical facility on roads which are particularly treacherous in winter. Although there is no specific data, this type of health care delivery system is expensive, so that some communities may find it difficult to support a nurse practitioner and/or find the right ingredients for a successful operation (i.e. cooperation from area physicians and hospitals).[63]

GOALS AND RECOMMENDATIONS

Mission: Equal access to quality health care at an affordable price (PL 93-641)

Goal: The supply of primary care physicians (GP/FP's, internists, pediatricians, obstetricians/gynecologists) in Montana should be increased so that there is more equitable accessibility of their services.

Recommendations:

1. Health career education should be used to increase interest among students in shortage area to enter the health field.

2. Admission policies should favor students with rural backgrounds and all students who are willing to become primary care physicians and set up practices in shortage areas.

3. The Montana State government should offer a loan repayment program to any medical student who agrees to exchange a year of service in a shortage area for every year of financial support by the state.

4. An endorsement program (similar to WICHE), with state support to the accepting school, should be offered to students wishing to study osteopathic medicine and return to the state to set up a primary care practice in a shortage area.

5. The state of Montana should continue the WICHE and WAMI program, but urge the WICHE and WAMI schools to develop or maintain a curriculum that emphasizes primary care practice in shortage areas for the program participants.

6. Preceptorship experiences for WAMI, WICHE, and osteopathic students, and family practice residents should be developed, most likely by the Commission for Higher Education. These programs should provide positive experience of primary care practice in shortage areas, especially in rural areas.

Goal: Incentives, rather than regulations, should be used to improve the accessibility of health care in Montana.

Recommendations:

1. The Montana State Government should help shortage areas establish incentive programs so that they can attract and retain a physician. This program could be a separate one, or coordinated with a comprehensive placement service. A comprehensive placement service could be established by a non-profit, or for-profit, agency which would coordinate the services offered by WHSI, HSRI, NHSC, RHI, MMA the MDH&ES, and MHSA. Physicians, dentists, nurses, physician extenders, and other types of health manpower should be recruited and the service format of the Community Health Clearinghouse in Seattle should serve as a model. The following summarizes the Clearinghouse services:

A. A committee encompassing all of the state's professional associations,

B. representatives to visit communities, helping them to establish a recruiting committee, to define the community's needs and resources, and to establish linkages with neighboring communities,*

C. have a nationwide recruitment program (for M.D.'s, D.O.'s, nurses, PE's, dentists, and allied health personnel),

D. keep in close contact with the physician and the community,

E. offer back-up service to physicians serving in shortage areas (the physicians in non-shortage areas could arrange for their own, or contract with HSRI),

F. offer access to good continuing medical education which is tailored to the needs of the rural practitioner,

G. offer consulting services from specialists (a 24-hour phone line like North Dakota has) could be used for CME and consulting services from specialists in the larger cities,

H. offer an orientation program to spouses to help them adjust to rural life.

*Local area health officers should be responsible for knowing the manpower needs of their county and should serve on these community committees. The community should decide the type of health care it needs, not the state. If a community desires physician extender services and it is feasible, then they should have the cooperation of the professional associations and state officials.

Goal: Communities should have access to the health care they need and can afford.

Recommendations:

1. The State Department of Health and Environmental Sciences and the Health Systems Agency should provide technical assistance to communities seeking health care providers--helping them to decide on the type of practitioner, the type of incentives, and the price.

2. Laws should be developed to allow health care delivery by non-physician health personnel in communities unable to attract a physician.

3. Emergency medical services should be available in all rural communities without ready access to physician services. These services will provide quick transportation to physician services for those requiring emergency care.

4. Specialists in the larger cities should be encouraged to visit outlying communities with or without hospitals, supported by larger hospitals adopting rural hospitals and clinics as satellite facilities.

SUMMARY OF IMPORTANT FINDINGS

--There are 124 active non-federal physicians in direct patient care per 100,000 civilians in Montana (a total of 926).

--The total physician supply in Montana is 984, with 94% (926) in direct patient care, 4% (35) inactive, and 2% (23) engaged in administration, medical research or other types of practice. There are no interns, residents, or physicians engaged in full-time medical teaching since Montana does not have a medical school.

--The age distribution of Montana physicians is as follows: 3.1% are under 30, 7.4% are 65 and older; The median age is 45.9 years.

--The supply of foreign medical graduates represents at least 3% of the active non-federal physician population, but could be as high as 6% (because 3% of the physicians on file had no identifiable place of graduation).

--Primary care specialists (GP/FP, internal medicine, pediatrics, obstetrics/gynecology) comprise 52.7% of the active non-federal physicians in Montana. GP/FP's comprise 55.5% of these specialties. The other 47.3% are in non-primary care specialties.

--The three counties with the largest populations in Montana--Missoula, Cascade, and Yellowstone--claim 48.6% of the active non-federal physicians but only 33% of the state's population.

--Missoula, Cascade, and Yellowstone counties claim 58.7% of the non-primary care specialists; only 3.2% of the non-primary care specialists are located in the 36 counties having less than 10,000 people. (Residents of these counties represent 21.4% of the state's population).

--Comparing the ratios of Montana's physician per 100,000 civilian population and the suggested ratios indicates that there is an overall need for primary care physicians (particularly GP/FP's), psychiatrists, and specialists in otolaryngology, anesthesiology, pathology, and urology. Overall, Montana has a surplus of general and orthopedic surgeons.

--Fourteen counties are candidates for primary care shortage area designations (and thereby eligible for National Health Service Corps physicians), 33 are less than adequately supplied (but are not within range for designation as shortage areas), 5 have an adequate number of primary care physicians, and 4 are over-supplied.

--Twenty-one counties have a shortage of GP/FP's, and 18 are over-supplied.

--Eight counties are over-supplied with non-primary care specialists.

--There are 55 federal physicians in Montana, providing services to veterans, Indians, and Malmstrom Air Force personnel and their families.

--In order to maintain the present physician/population ratio, Montana must have an overall gain of 135 active physicians in direct patient care by 1985. In order to attain the suggested physician/population ratio by 1985 Montana must have a net gain of 352 physicians in direct patient care.

GLOSSARY

CME - continuing medical education: education above and beyond degree training.

DPC - direct patient care: refers to physicians who are engaged in seeing patients.

GP/FP - general/family practitioner.

HSRI - Health Systems Research Institute in Salt Lake City.

intern - refers to a physician receiving supervised training in a hospital and who is continuing to be trained in the sciences and medical arts by the staff of the hospital.

internist - a physician practicing internal medicine.

MMA - Montana Medical Association.

NHSC - National Health Service Corps.

NPC - non-primary care: refers to physician specialties that involve referrals from primary care specialists and who provide highly specialized services to a limited number of people.

PC - primary care: refers to general/family practitioners, internists, pediatricians, and obstetricians/gynecologists.

resident - a physician in advanced training in a specialty who is preparing to practice that specialty.

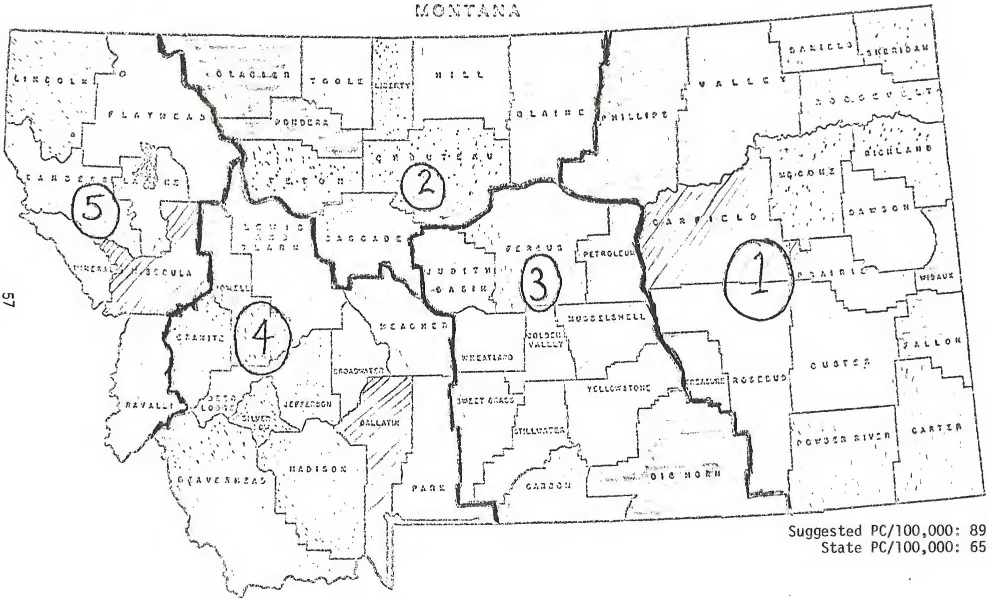
RHI - Rural Health Initiative.

SEP - Student Exchange Program offered by Western Interstate Commission for Higher Education (WICHE).

WAMI - an acronym representing a program by the University of Washington School of Medicine to admit students from Washington, Alaska, Montana, and Idaho.

WICHE - Western Interstate Commission for Higher Education--a program offering educational opportunities to students in western states.

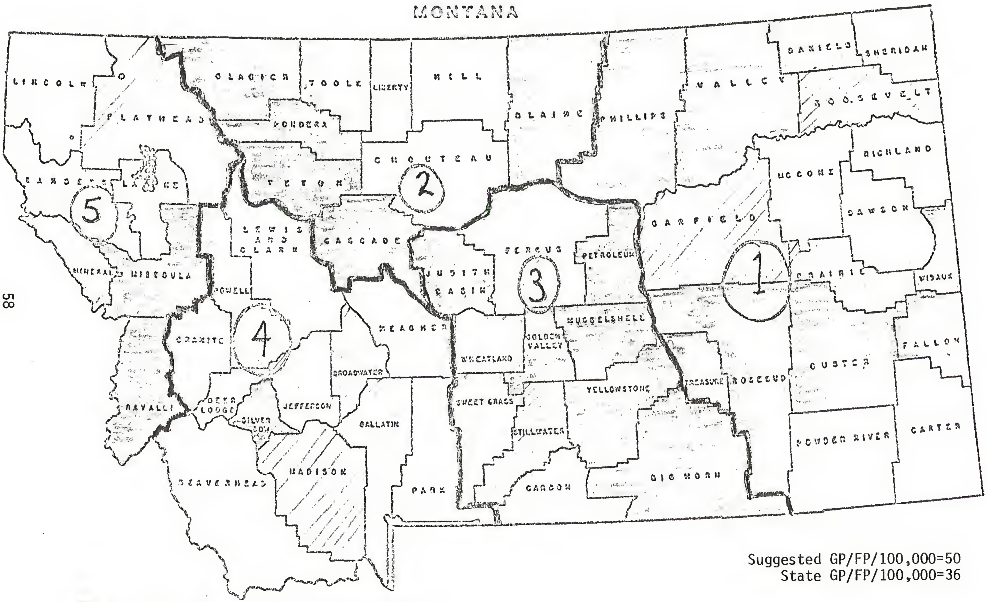
MAP E-1: THE COUNTY SUPPLY OF PRIMARY CARE PHYSICIANS IN MONTANA ACCORDING TO THE RATIOS OF THESE PHYSICIANS/100,000 CIVILIAN POPULATION - 1977



Suggested PC/100,000: 89
State PC/100,000: 65

░ Less than 33 shortage area for primary care
▒ 34-79 less than adequate supply
☐ 80-90 adequate
▨ Greater than 90 oversupplied

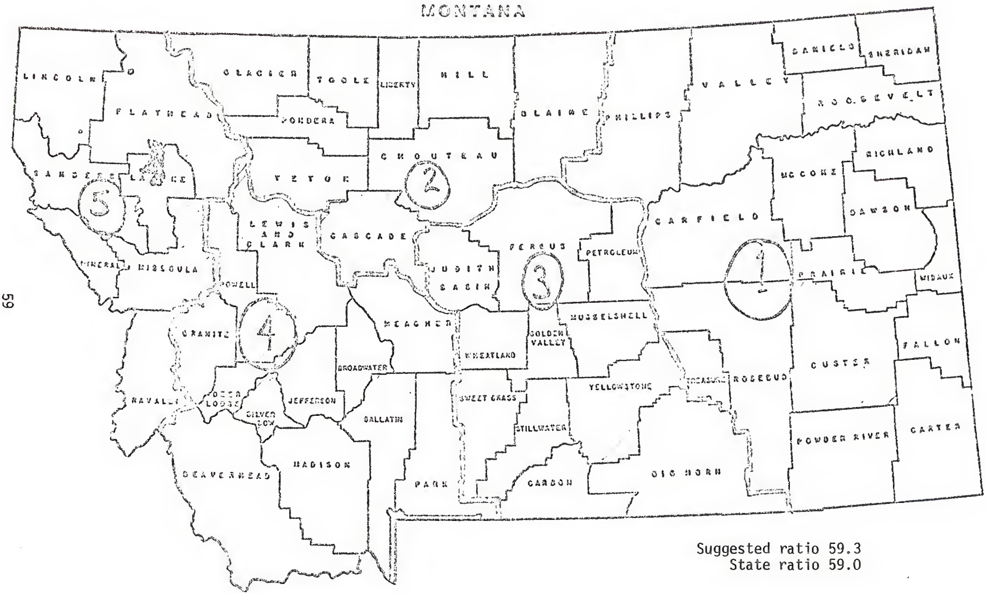
MAP E-2: THE COUNTY SUPPLY OF GENERAL/FAMILY PRACTITIONERS IN MONTANA ACCORDING TO THE RATIOS OF THESE PHYSICIANS/100,000 CIVILIAN POPULATION - 1977



Suggested GP/FP/100,000=50
State GP/FP/100,000=36

▒ Less than 33 shortage area for GP/FP
☐ 34-50 low to adequate supply
▨ Greater than 50 oversupplied

MAP E-3: MONTANA COUNTIES WITH AN OVERSUPPLY OF NON-PRIMARY CARE PHYSICIANS ACCORDING TO THE RATIO OF THESE PHYSICIANS/100,000 CIVILIAN POPULATION - 1977



Suggested ratio 59.3
State ratio 59.0

▨ overdoctored

☐ not overdoctored

APPENDIX A: INFORMATION AVAILABLE ON PHYSICIANS

The physician data on file at the Bureau of Records and Statistics, Montana State Department of Health and Environmental Sciences includes the following information:

1. physician's name: Last name, first name, and middle initial
2. physician's professional mailing address and phone number
3. date of birth
4. date of licensure
5. name and location of medical school
6. year of graduation
7. type of practice
8. 1977 status code for membership in MMA,MOA, and AOA (American Osteopathic Association)
9. primary specialty
10. secondary and tertiary specialties
11. occupation code (M.D. or D.O.)

The primary specialty is the field the physician indicated as consuming the largest percentage of his or her professional time. The secondary and tertiary specialties are the additional fields in which the physician indicates a limited practice.

APPENDIX B: TYPE OF PRACTICE CODES FROM THE 1972 AMA DIRECTORY (p.xi)

The Type of Practice code is indicated by a numeric code and reflects the physician's PRIMARY type of practice as follows:

Intern	Any physician in supervised practice of medicine among patients in a hospital or in its out-patient department, with continued instruction in the science and art of medicine by the staff of the facility.
Resident	Any physician in advanced training in the clinical divisions of medicine, surgery, and other specialty fields preparing for practice in a given specialty.
Direct Patient Care	Physicians engaged in seeing patients--also includes patient services by such physicians as pathologists and radiologists.
Administration	Physicians in administrative activities in a hospital, health facility, health agency, clinic group, or any other organization.
Medical Teaching	Physicians with teaching responsibilities in medical schools, hospitals, nursing schools, colleges, universities, or other educational institutions.
Medical Research	Physicians conducting research.
Other Patient Care	Physicians rendering patient care as part of other professional activities (other than training, teaching, or research) in hospitals, health facilities, other allied health organizations, or in various health programs.
Other Non-Patient Care	Physicians engaged in journalism, law, sales, insurance, or other health related activities.
Inactive	Physicians who are retired (071), semi-retired (072), permanently disabled (073), temporarily not in practice (074), or not active for other reasons (075).
No Classification	Physicians who did not provide information on their type of practice.

APPENDIX C: AGE DISTRIBUTION OF NON-FEDERAL MONTANA PHYSICIANS IN DIRECT PATIENT CARE, BY REGION - 1977

	Total Number	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70+	Unknown
EASTERN	67	7	10	8	6	4	14	7	3	2	6	0
NORTH CENTRAL	163	3	22	30	16	21	21	17	19	8	5	1
SOUTH CENTRAL	208	4	33	42	34	25	25	21	14	5	5	0
SOUTHWESTERN	236	4	29	42	23	29	33	36	20	10	10	0
NORTHWESTERN	252	11	38	47	36	25	27	33	18	10	7	0
STATE TOTALS	926	29	132	169	115	104	120	114	74	35	33	1
% OF TOTAL	100.1	3.1	14.3	18.3	12.4	11.2	13.0	12.3	8.0	3.8	3.6	.1

MEDIAL AGE: 45.9 years

APPENDIX D: SUGGESTED RATIO OF SPECIALISTS PER 100,000 POPULATION (see footnote #7 - Medical Economics)

		Suggested Ratio Specialist/100,000 Civilian Population
I	Primary Care Specialists	
A.	General/Family Practice	50.0
B.	Internal Medicine	20.0
C.	Pediatrics	10.0
D.	Obstetrics/Gynecology	9.0
	Ratio for primary care specialists	89.0
II	Non-Primary Care Specialists	
	Anesthesiology	6.7
	Dermatology	2.0
	General Surgery	10.0
	Neurology	1.3
	Neurosurgery	1.0
	Ophthalmology	5.0
	Orthopedics	3.3
	Otolaryngology	4.0
	Pathology	5.0
	Psychiatry	10.0
	Radiology	6.7
	Thoracic Surgery	1.0
	Urology	3.3
	All Other	?
	Ratio for Non-primary care specialists	59.3+?
	Ratio for total physicians supply	148.3+?

APPENDIX E: NUMBER AND RATIO PER 100,000 CIVILIAN POPULATION OF MONTANA's NON-FEDERAL PHYSICIANS IN DIRECT PATIENT CARE BY COUNTIES GROUPED ACCORDING TO THEIR POPULATION - 1977

		Number in DPC (ratio)	Number in GP/FP (ratio)	Number in PC (ratio)	Number in NPC (ratio)
Counties with less than 1,000 population					
Petroleum (700)		0 (-)	0 (-)$^{\oplus}$	0 (-)$^{=}$	0 (-)
Golden Valley (900)		0 (-)	0 (-)$^{\oplus}$	0 (-)$^{=}$	0 (-)
TOTAL	1,600	0 (-)	0 (-)$^{\oplus}$	0 (-)$^{=}$	0 (-)
Counties with 1,000 - 5,000 population					
Treasure	1,200	0 (-)	0 (-)$^{=}$	0 (-)$^{\oplus}$	0 (-)
Wibaux	1,500	0 (-)	0 (-)$^{=}$	0 (-)$^{\oplus}$	0 (-)
Garfield	1,700	2 (118)	2 (118)^{x}	2 (118)^{x}	0 (-)
Carter	1,900	1 (53)	1 (53)^{x}	1 (53)	0 (-)
Prairie	1,900	2 (105)	2 (105)^{x}	2 (105)^{x}	0 (-)
Meagher	2,300	1 (43)	1 (43)	1 (43)	0 (-)
Powder River	2,400	1 (42)	1 (42)	1 (42)	0 (-)
Wheatland	2.400	2 (83)	2 (83)^{x}	2 (83)	0 (-)
Liberty	2,500	2 (80)	1 (40)	1 (40)	1 (40)
McCone	2,700	1 (37)	1 (37)	1 (37)	0 (-)
Judith Basin	2,700	1 (37)	0 (-)$^{=}$	0 (-)$^{\oplus}$	1 (37)
Granite	2,700	1 (37)	1 (37)	1 (37)	0 (-)
Broadwater	2,800	2 (71)	2 (71)^{x}	2 (71)	0 (-)
Sweet Grass	3,000	2 (67)	2 (67)^{x}	2 (67)	0 (-)
Daniels	3,100	2 (65)	2 (65)^{x}	2 (65)	0 (-)
Mineral	3,500	2 (57)	2 (57)^{x}	2 (57)	0 (-)
Fallon	4,000	2 (50)	1 (25)$^{=}$	1 (25)$^{\oplus}$	1 (25)
Musselshell	4,200	1 (24)	1 (24)$^{=}$	1 (24)$^{\oplus}$	0 (-)
TOTAL	46,500	25 (54)	22 (47)	22 (47)	3 (6)

x - oversupplied

= - shortage of GP/FP

⊕ - shortage of primary care

APPENDIX E: (continued-page 2)

		Number in DPC (ratio)	Number in GP/FP (ratio)	Number in PC (ratio)	Number in NPC (ratio)
Counties with 5,000 - 10,000 population					
Stillwater	5,200	3 (58)	3 (58)	3 (58)	0 (-)
Phillips	5,400	1 (19)	1 (19)	1 (19)	0 (-)
Sheridan	5,400	2 (37)	2 (37)	2 (37)	0 (-)
Toole	5,400	4 (74)	4 (74)[x]	4 (74)	0 (-)
Madison	5,800	5 (86)	3 (52)[x]	3 (52)	2 (34)
Chouteau	6,300	3 (48)	3 (48)	3 (48)	0 (-)
Teton	6,500	3 (46)	2 (31)	3 (46)	0 (-)
Jefferson	6,700	5 (75)	4 (60)[x]	4 (60)	1 (15)
Blaine	6,800	2 (29)	2 (29)	2 (29)	0 (-)
Pondera	6,900	3 (43)	2 (29)	2 (29)	1 (14)
Powell	7,500	5 (67)	4 (53)[x]	4 (53)	1 (13)
Carbon	7,800	5 (64)	5 (64)[x]	5 (64)	0 (-)
Sanders	8,100	5 (62)	4 (49)	4 (49)	1 (12)
Beaverhead	8,300	7 (84)	4 (48)	4 (48)	3 (36)
Rosebud	9,700	3 (31)	3 (31)	3 (31)	0 (-)
Richland	9,900	6 (61)	4 (40)	4 (40)	2 (20)
TOTAL	111,700	62 (56)	50 (45)	51 (46)	11 (10)

APPENDIX E: (continued-page 3)

		Number in DPC Oratio)	Number in GP/FP (ratio)	Number in PC (ratio)	Number in NPC (ratio)
Counties with 10,000 to 25,000 population					
Roosevelt	10,300	7 (68)	6 (58)^{x}	6 (58)	1 (10)
Dawson	10,700	10 (93)	5 (47)	8 (75)	2 (19)
Big Horn	10,900	2 (18)	2 (18)	2 (18)	0 (-)
Glacier	11,100	3 (27)	2 (18)	2 (18)	1 (9)
Custer	12,000	20 (167)^{x}	3 (25)	11 (92)^{x}	9 (75)^{x}
Park	12,100	12 (99)	5 (41)	7 (58)	5 (42)
Fergus	13,000	11 (85)	7 (54)^{x}	7 (54)	4 (31)
Valley	13,200	7 (53)	4 (30)	4 (30)	3 (23)
Deer Lodge	15,200	17 (112)	10 (66)^{x}	10 (66)	7 (46)
Lincoln	16,500	10 (61)	6 (36)	8 (48)	2 (12)
Lake	17,100	10 (58)	6 (35)	8 (47)	2 (12)
Hill	17,900	19 (106)	6 (34)	12 (67)	7 (39)
Ravalli	18,400	11 (60)	6 (33)	8 (43)	3 (16)
TOTAL	178,400	139 (78)	68 (38)	93 (52)	46 (26)
Counties with 25,000 to 50,000 population					
Lewis & Clark	36,900	68 (184)^{x}	13 (35)	32 (89)	36 (98)^{x}
Gallatin	37,300	62 (166)^{x}	26 (70)^{x}	37 (99)^{x}	25 (67)^{x}
Silver Bow	43,000	51 (119)	9 (21)	20 (47)	31 (72)^{x}
Flathead	44,600	69 (154)^{x}	26 (58)^{x}	40 (90)^{x}	29 (65)^{x}
TOTAL	161,800	250 (155)^{x}	74 (46)	129 (80)	121 (75)^{x}
Counties with greater than 50,000 population					
Missoula	64,600	145 (224)^{x}	16 (25)$^{=}$	62 (96)^{x}	83 (128)^{x}
Cascade	83,900	124 (148)	17 (20)$^{=}$	49 (58)	75 (89)^{x}
Yellowstone	97,300	181 (186)^{x}	24 (24)$^{=}$	82 (84)	99 (102)^{x}
TOTAL	245,800	450 (183)^{x}	57 (23)	193 (79)	257 (106)^{x}
STATE TOTAL		926 (124)	271 (36)	488 (65)	438 (59)

APPENDIX F: COVER LETTER AND QUESTIONNAIRE

MONTANA
MEDICAL
ASSOCIATION

2021 Eleventh Avenue ⚬ Suite 12 ⚬ Helena, Montana 59601

December 5, 1977
Monday

MEMORANDUM

TO: EACH MONTANA PHYSICIAN

FROM: JAMES K. COPE, M.D , PRESIDENT

Dear Doctor:

Public Law 93-641, The National Health Planning and Resources Development Act of 1974, directs that each health systems agency must assess health manpower needs in its health service area.

This Association believes it important and necessary to obtain physician's viewpoints on health manpower needs so that knowledgeable and firsthand data may be available to complete the survey which must be undertaken by the Montana Health Systems Agency, Inc.

Marcia Liberatore, a WICHE intern and pre-medical student working with the Bureau of Health Planning, State Department of Health and Environmental Sciences, in assisting the MHSA, has prepared a questionnaire which will be forwarded to you in the next couple days. May we, therefore, request your assistance in completing this questionnaire. Your response is vital if physician ideas and comments are to be incorporated into the overall health systems plan.

I do thank you for your concern.

JKC:vm
Enclosure

INSTRUCTIONS: Circle responses where appropriate.
PLEASE RESPOND IMMEDIATELY

PRACTICE LOCATION: City ______________________ County ______________________

AGE: under 30 30-39 40-49 50-59 60-69 70 or over

TYPE OF PRACTICE: direct patient care administration medical teaching

medical research inactive other (specify) ______________________

If direct patient care, which of the following apply? solo practice

group practice salaried fee-for-service office-based hospital-based

Are you a general practitioner/family practitioner? yes no

If you are a specialist, specify type ______________________

Average number of hours practiced per week ______________

Average number of weeks practiced per year ______________

Average number of patient visits per week ______________

Allied health personnel on staff:

TYPE	NUMBER	AVERAGE NUMBER OF WORKING HRS/WEEK
Physician assistant		
Nurse practitioner		
RN		
LPN		
Nurses aide		
X-ray tech and lab tech		
Secretary, receptionist		
Other, list		

The majority of your patients are age: under 15 15-44 45-64 65 and over

List the surrounding cities, counties or states from which you draw (rough estimate)

a. 50% or more of your patients ______________________
b. 25-50% of your patients ______________________
c. 10-25% of your patients ______________________
d. less than 10% of them ______________________

In your judgment, with regard to your practice, the number of physicians needed to meet the expressed demands for care

	IDEAL NUMBER	ADEQUATE NUMBER	MINIMALLY ACCEPTABLE #
in your city is			
in your county is			

Had you lived in Montana prior to establishing a practice here? yes no

Would you like a copy of the results of this study? yes no

Please identify problems you see with regards to the physician manpower situation in Montana (and solutions if any).

APPENDIX G: ADDRESS OF ORGANIZATIONS OFFERING REFERRAL AND PLACEMENT SERVICES

Community Health Clearinghouse
Alterra Building
1370 Stewart Street
Seattle, WA 98109
Name: Cathy Campbell, Program Director (206) 682-3780

Health Systems Research Institute
715 East 3900 South
Suite 215
Salt Lake City, UT 84119
Name: George Powell, Vice President (801) 261-1000

Montana State Department of Health
and Environmental Sciences
Bureau of Health Planning and
Resource Development
Cogswell Building
Helena, MT 59601
Name: Judy Johnston, Plan Development Specialist (406) 449-3121

Montana Medical Association
2021 - 11th Avenue
Helena, MT 59601
Name: G. Brian Zins, Executive Director (406) 443-4000

National Health Service Corps
(and Rural Health Initiative)
Dept of HEW, Region VIII
1961 Stout Street
Denver, CO 80202
Name: Aubrey Hall, Regional Program Director (303) 837-3319

Western Health Systems, Inc.
503½ Sixth Street
Rapid City, SD 57701
Name: William R. Wyatt or Donald O. Mueller (605) 348-2037

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This report was completed by a WICHE intern. This intern's project was part of the Resources Development Internship Program administered by the Western Interstate Commission for Higher Education (WICHE).

The purpose of the internship program is to bring organizations involved in community and economic development, environmental problems and their students in the West for the benefit of all.

For these organizations, the intern program provides the problem-solving talents of student manpower while making the resources of universities and colleges more available. For institutions of higher education, the program provides relevant field education for their students while building their capacity for problem-solving.

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